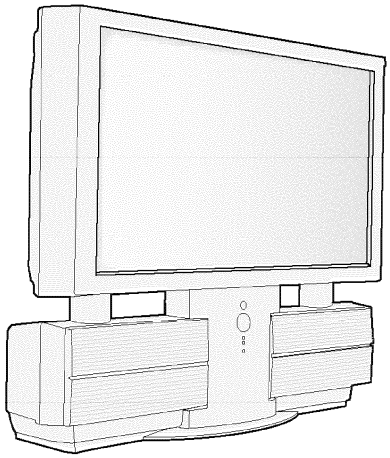
Order No. MKE0204850C1
B2

Service Manual

Multi Media Display

PT-40LC12 / PT-45LC12



SPECIFICATIONS

ITEM	SPECIFICATION	1	2
LCD panels	0.9" Poly silicon TFT LCD Panel X 3 RGB shutter method, using Translucent TN crystal panels	○	○
Drive method	Active Matrix 4:3 Aspect Ratio panels, TFT (Thin Film Transistor)	○	○
No. of pixels	921,600 (1,280 X 720) stripe pixels X 3 panels (16:9)	○	○
Lens	F2.3, f13 mm	○	○
HID Lamp	150 W HID (High Intensity Discharged) Lamp	○	○
Contrast ratio	400 : 1 (Typ)	○	○
Brightness	650 cd/m²	○	○
No. of Colors	16,777,216	○	○
Display	40 inch, 16 : 9 aspect ratio 45 inch, 16 : 9 aspect ratio	○ –	– ○
Television System	EIA Standard (525 lines, 60 fields) NTSC Color Signal	○	○
Video input signal	1 Vp-p, sync negative, 75 Ω terminated	○	○
S-Video input signal	Y (luminance signal): 1 Vp-p, sync negative, 75 Ω terminated C (chrominance signal): burst 0.286 Vp-p, 75 Ω terminated	○	○
RGB input signal	Video signal: RGB Analog (0.7 Vp-p, 1.0 Vp-p with sync on green, 75 Ω) Sync signal: H/V separate, H/V composite H-Frequency: 31.47 kHz-68.68 kHz (TTL Level) V-Frequency: 56.25 Hz-85.08 Hz (TTL Level)	○	○
Component Video input signal	Y: 1.0 Vp-p, with sync, 75 Ω. P_B, P_R: ±0.35 Vp-p, 75 Ω. YP_BP_R Signal: 480 i H-Frequency 15.73 kHz V-Frequency 29.97 Hz 480 p H-Frequency 31.47 kHz V-Frequency 59.94 Hz 720 p H-Frequency 45.00 kHz V-Frequency 60.00 Hz 1080 i H-Frequency 33.75 kHz V-Frequency 30.00 Hz	○	○

ITEM	SPECIFICATION	1	2
Audio input signal	0.5 Vrms	○	○
Audio out	0.5 Vrms	○	○
Tuner	Broadcast Channels: VHF 2~13, UHF 14~69 CABLE Channels: Midband A through I (14~22) Superband J through W (23~36) Hyperband AA~EEE (37~64) Lowband A-5~A-1 (95~99) Special CABLE channel 5A (01) Ultraband 65~94, 100~125	○	○
Connectors	S-Video Input: Mini Din 4-pin Video Input: RCA Pin Jack RGB Input: D-Sub mini 15-pin Component Video Input: 3 RCA Pin Jacks Audio Input: M3 Stereo mini Pin Jack 2 RCA Pin Jacks (L-R) S-Video Output: Mini Din 4-pin Video Output: RCA Pin Jack Audio Output: M3 Stereo mini Pin Jack 2 RCA Pin Jack (L-R)	○	○
Speaker	2 Speakers 20 W [10 W + 10 W] (10 % THD)	○	○
Power Source	AC 120 V, 60 Hz	○	○
Power Consumption	Power ON: Approx. 280 W Power OFF: Approx. 3 W (When cooling fan is stopped)	○	○
Operating Condition	Temperature: 0 °C~40 °C (32 °F~104 °F) Humidity: 20 %~80 % (non-condensing)	○	○
Weight	42 kg (92.6 lbs.) 44 kg (97.0 lbs.)	○ –	– ○
Dimension (W x H x D)	970 mm x 898 mm x 415 mm (38-3/16 inch x 35-3/8 inch x 16-5/16 inch) 1,081 mm x 978 mm x 415 mm (42-9/16 inch x 38-1/2 inch x 16-5/16 inch)	○ –	– ○

1. PT-40LC12
2. PT-45LC12

Weight and dimensions shown are approximate.
Designs and specifications are subject to change without notice.

Panasonic®

1. SAFETY PRECAUSIONS

1.1. GENERAL GUIDELINES

1. For continued safety, no modification of any circuit should be attempted.
2. Disconnect AC Plug before disassembling this unit.
3. It is advisable to use an isolation transformer in the AC supply before servicing.
4. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
5. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers, shield, and isolation R-C combinations etc. are properly installed.
6. After servicing, be sure to restore the wires, leads, insulation barriers, shields, etc.
7. After servicing, make the leakage current checks to prevent the customer from being exposed to shock hazards.

Caution:

Use a separate Isolation Transformer for this unit when servicing.

1.2. LEAKAGE CURRENT COLD CHECK

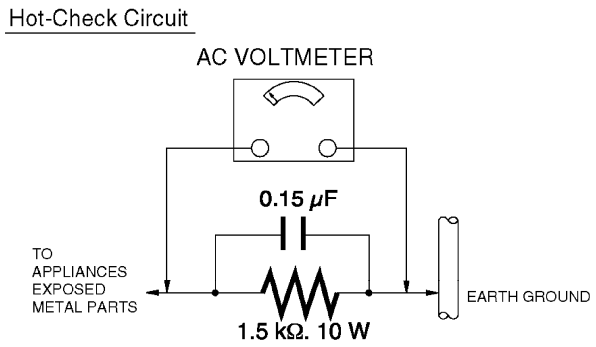
1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. For physically operated power switches, turn power on. Otherwise skip step 2.
3. Measure the resistance value, with an ohmmeter, between the

jumpered AC plug and each exposed metallic cabinet part on the receiver, such as screwheads, connectors, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1 M Ω and 12 M Ω . When the exposed metal does not have a return path to the chassis, the reading must be infinity.

1.3. LEAKAGE CURRENT HOT CHECK

1. **Plug the AC cord directly into the AC outlet.**
   Do not use a isolation transformer for this check.
2. **Connect a 1.5 k Ω , 10 W resistor, in parallel with a 0.15 μ F capacitor, between each exposed metallic part on the set and a good earth ground , as shown in Figure 1.**
3. **Use an AC voltmeter, with 1 k Ω /V or more sensitivity, to measure the potential across the resistor.**
4. **Check each exposed metallic part, and measure the voltage at each point.**
5. **Reverse the AC plug in the AC outlet and repeat each of the above measurements.**
6. **The potential at any point should not exceed 0.75 V RMS.**
   A leakage current tester (Simpson Model 229 equivalent) may be used to make the hot checks. Leakage current must not exceed 1/2 mA. In case a measurement is outside of the limits specified, there is a possibility of shock hazard, and the receiver should be repaired and rechecked before it is returned to the customer.

Figure 1



1.4. UV-PRECAUTION

1. **Be sure to disconnect the AC Plug when replacing the lamp.**
2. **Since the lamp reaches a very high temperature during its operation,**

wait until it has completely cooled off when replacing the Lamp Unit.

3. **The lamp emits small amounts of UV-Radiation.**
   Avoid direct-eye contact by covering the Lamp and wearing the UV cut protective glass.
4. **The high pressure lamp involves a risk of explosion. Therefore, do not touch the Lamp Bulb when servicing.**

Figure 2

This product has a High Intensity Discharge (HID) lamp that contains a small amount of mercury. It also contains lead in some components.
Disposal of these materials may be regulated in your community due to environmental considerations.
For disposal or recycling information please contact your local authorities, or the Electronics Industries Alliance: <http://www.eiae.org.>

2. PREVENTION OF ELECTROSTATIC DISCHARGE (ESD) TO ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electro static discharge (ESD).

1. **Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.**

2. **After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.**
3. **Use only a grounded-tip soldering iron to solder or unsolder ES devices.**
4. **Use only an antistatic solder removal device. Some solder removal devices not classified as "antistatic (ESD protected)" can generate electrical charge sufficient to damage ES devices.**
5. **Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.**
6. **Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).**
7. **Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.**
   CAUTION :
   Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. **Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).**

3. OPERATION GUIDE

4. SERVICE NOTES

5. DISASSEMBLY/ASSEMBLY PROCEDURES

5.1. CABINET SECTION

5.2. LARGE VIEW FOR DISASSEMBLY/ASSEMBLY OF CABINET

6. SERVICE FIXTURES AND TOOLS

7. TROUBLESHOOTING HINTS

8. BLOCK DIAGRAMS

9. SCHEMATIC DIAGRAMS

9.1. SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES

9.2. INTERCONNECTION SCHEMATIC DIAGRAM

9.3. FRONT JACK SCHEMATIC DIAGRAM

9.4. RGB JACK / OPERATION SCHEMATIC DIAGRAMS

9.5. AUDIO POWER / LAMP THERMISTOR / FRONT THERMISTOR / LAMP COVER SWITCH SCHEMATIC DIAGRAMS

9.6. WAVEFORMS

10. CIRCUIT BOARD LAYOUT

10.1. FRONT JACK C.B.A. / RGB JACK C.B.A. / OPERATION C.B.A.

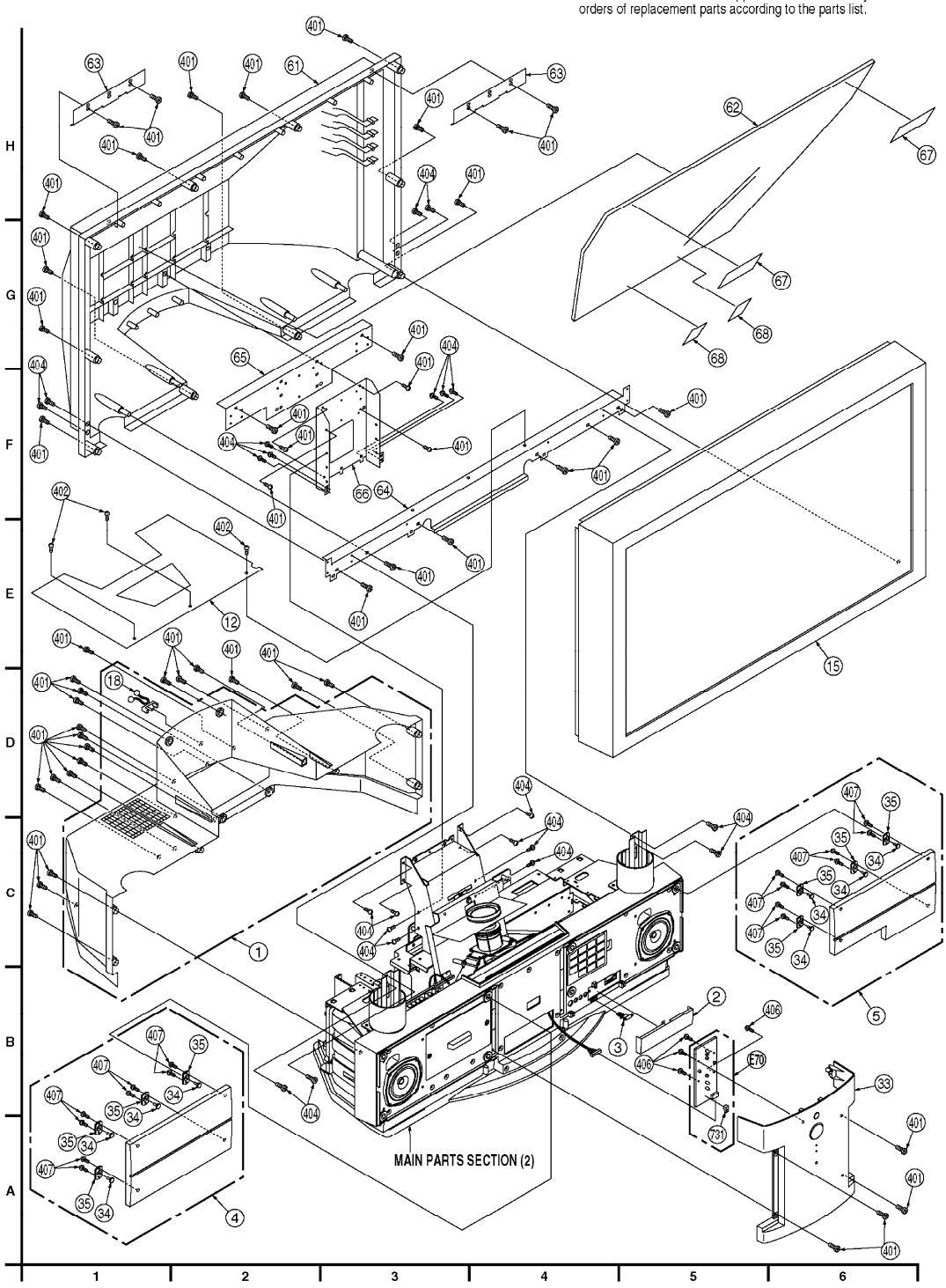
10.2. AUDIO POWER C.B.A. / LAMP THERMISTOR C.B.A. / FRONT THERMISTOR C.B.A. / LAMP COVER SWITCH C.B.A.

11. EXPLODED VIEWS

11.1. MAIN PARTS SECTION (1)

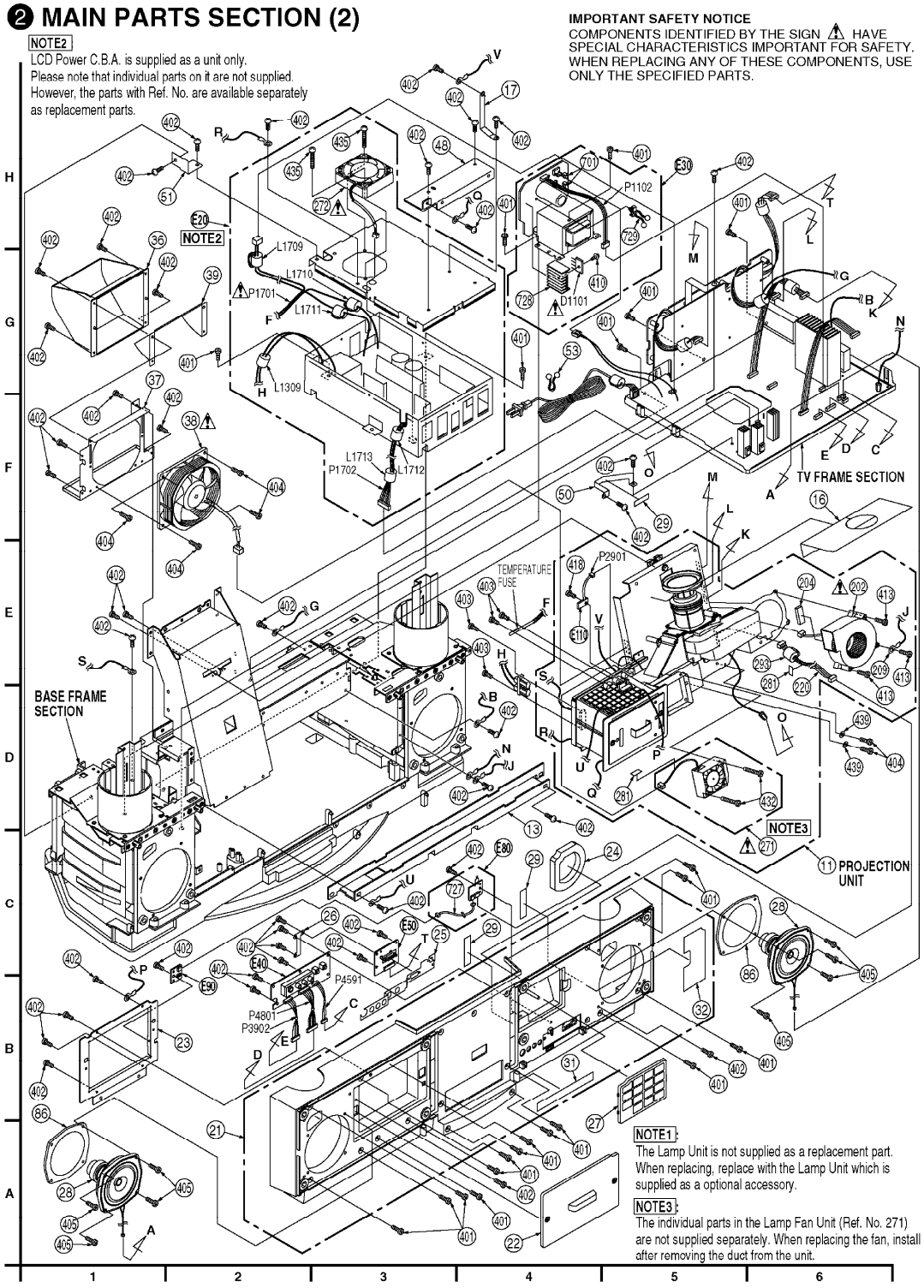
❶ MAIN PARTS SECTION (1)

Note: Parts with no Ref. No. in "EXPLODED VIEW" are not supplied. And some Ref. No. will be skipped. Be sure to make your orders of replacement parts according to the parts list.



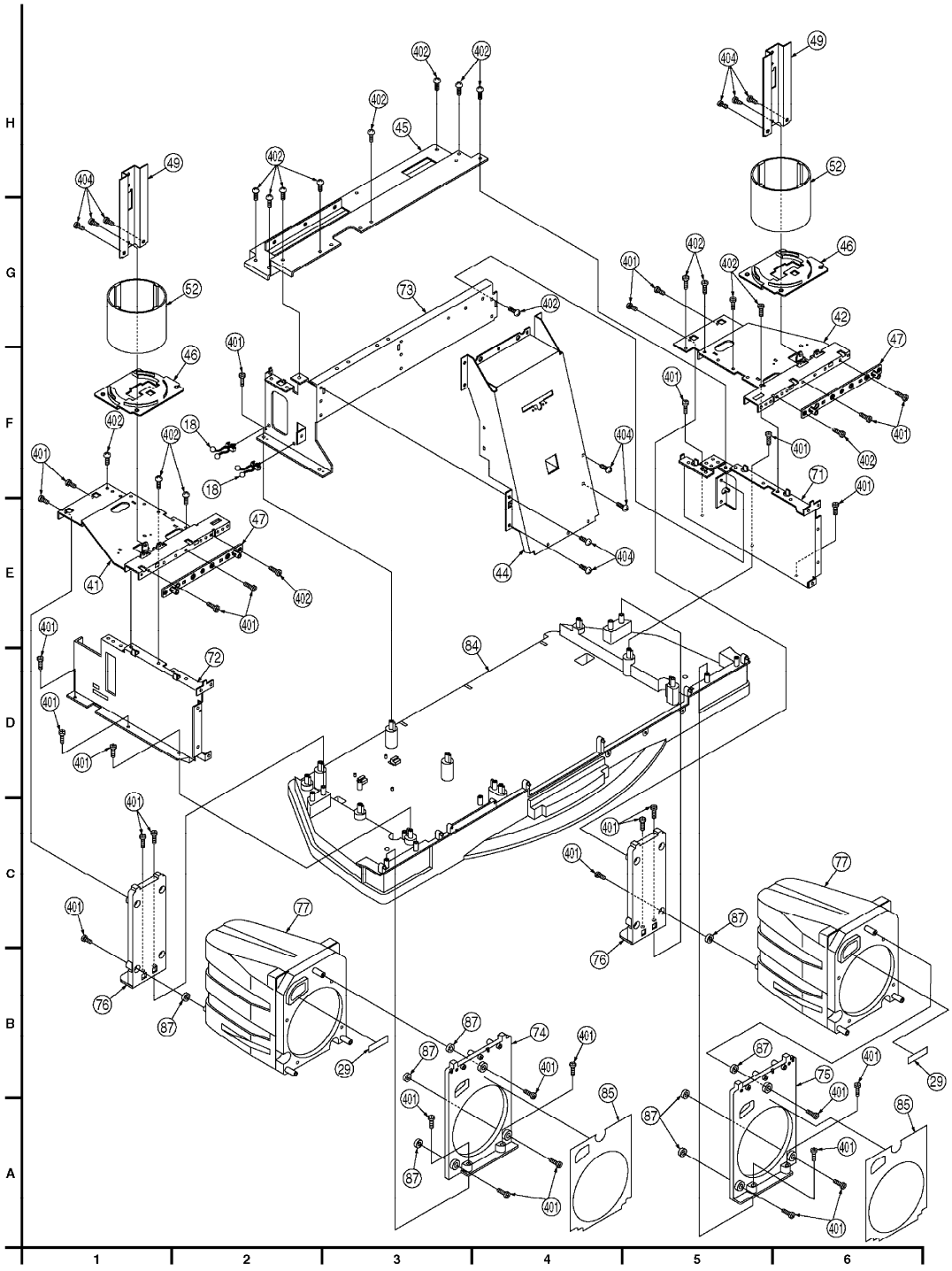
11.2. MAIN PARTS SECTION (2)

❷ MAIN PARTS SECTION (2)


IMPORTANT SAFETY NOTICE
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.
NOTE2
LCD Power C.B.A. is supplied as a unit only.
Please note that individual parts on it are not supplied.
However, the parts with Ref. No. are available separately as replacement parts.
TV FRAME SECTION
BASE FRAME SECTION
TEMPERATURE FUSE
NOTE3
11 PROJECTION UNIT
NOTE1:
The Lamp Unit is not supplied as a replacement part. When replacing, replace with the Lamp Unit which is supplied as a optional accessory.
NOTE3:
The individual parts in the Lamp Fan Unit (Ref. No. 271) are not supplied separately. When replacing the fan, install after removing the duct from the unit.

11.3. BASE FRAME SCTION

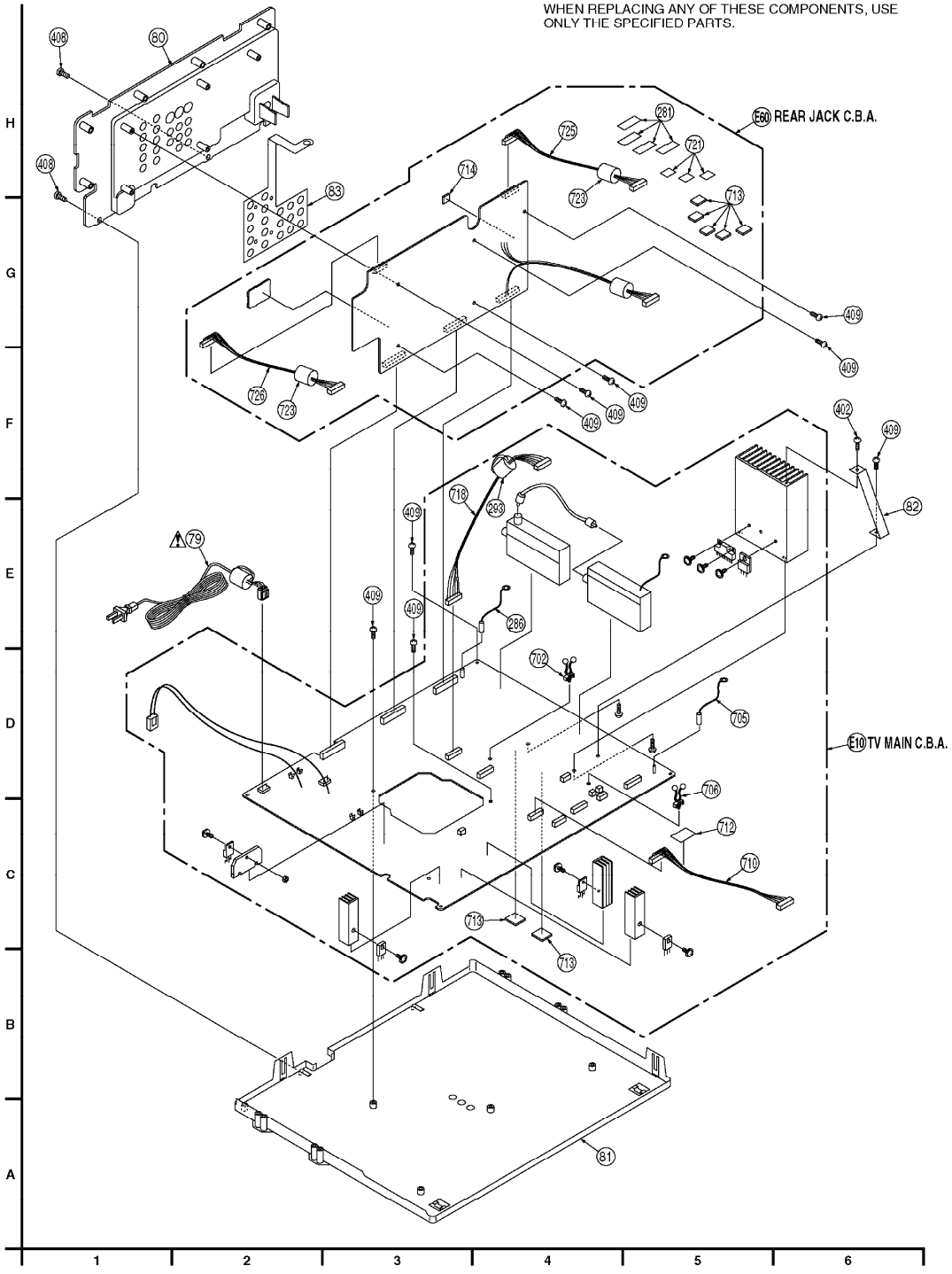
❸ BASE FRAME SECTION



11.4. TV FARME SECTION

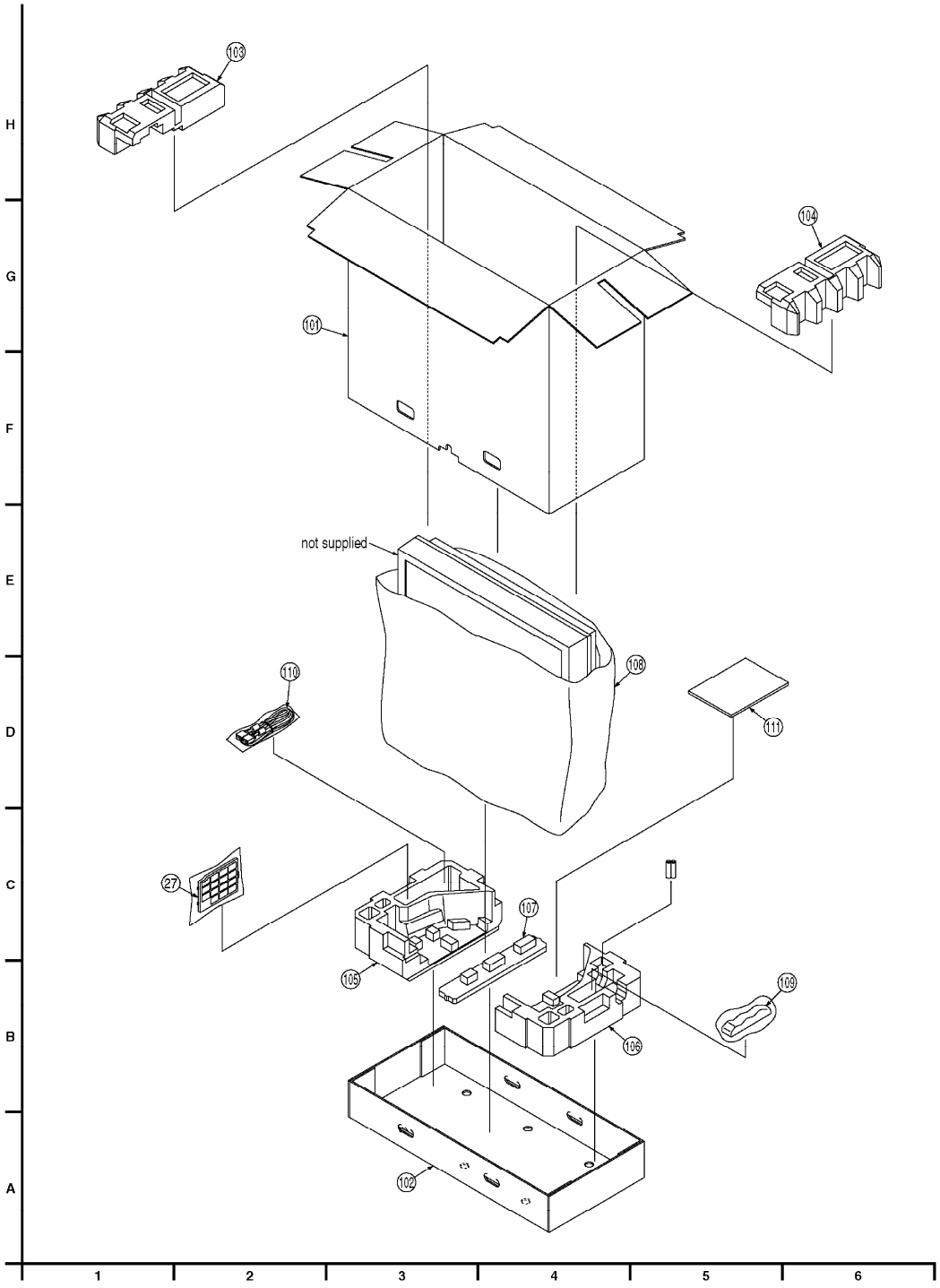
❹ TV FRAME SECTION

IMPORTANT SAFETY NOTICE
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.



11.5. PACKING PARTS AND ACCESSORIES SECTION

❺ PACKING PARTS AND ACCESSORIES SECTION



12. REPLACEMENT PARTS LISTS

BEFORE REPLACING PARTS, READ THE FOLLOWING:

12.1. REPLACEMENT NOTES

12.1.1. General Notes

1. Use only original replacement parts:

To maintain original function and reliability of repaired units, use only

original replacement parts which are listed with their part numbers in the parts list.

2. **IMPORTANT SAFETY NOTICE**
   Components identified by the sign ⚠ have special characteristics important for safety. When replacing any of these components, use only the specified parts.
3. **SPECIAL NOTE**
   All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" section of this service manual.
4. **Parts with no Ref. No. in "EXPLODED VIEWS" are not supplied. And some Ref. No. will be skipped. Be sure to make your orders of replacement parts according to the parts list.**
5. **Parts different in shape or size may be used. However, only interchangeable parts will be supplied as service replacement parts.**
6. **Parts with mark "MKE" in the Remarks column are supplied from MKE. Others are supplied from MKA.**
7. **Item numbers with capital letter E (Example: E10, E20,...) in the Ref. No. column are shown in the exploded views.**
8. **Parts whose Ref. Nos. are the same are interchangeable as replacement parts. Any of these parts may be ordered and used as a replacement part.**

12.1.2. Mechanical Replacement Notes

1. **Section No. of parts shown in Exploded Views are indicated in the Remarks column.**
2. **After replacing the Projection Unit (Ref. No. 11), be sure to perform "Picture Position Adjustment," "Focus Adjustment," "Set LAMP RUN TIME of original value," and "Reset Filter Time." Refer to "WHEN REPLACING THE PROJECTION UNIT ON THE UNIT AT THE USER'S LOCATION" in SERVICE NOTES.**
3. **When replacing the Projection Unit (Ref. No. 11), be sure to place the Light Prevention Plate B (Ref. No. 16) on it.**
4. **The Infrared Remote Control Unit (Ref. No. 123) replacement part is available as a complete assembly unit only. Do not try to disassemble**

the Infrared Remote Control Unit.

5. **When replacing the Front Thermistor C.B.A. (Ref. No. E80) or the Base Front Unit (Ref. No. 21), be sure to place the Joint Filter (Ref. No. 24).**
6. **After replacing the Filter Unit (Ref. No. 27), be sure to perform "Reset Filter Time." Refer to "WHEN REPLACING THE PROJECTION UNIT ON THE UNIT AT THE USER'S LOCATION" in SERVICE NOTES.**
7. **The individual parts in the Lamp Fan Unit (Ref. No. 271) are not supplied separately. When replacing the fan, install after removing the duct from the unit.**

12.1.3. Electrical Replacement Notes

1. **Unless otherwise specified;**
   All resistors are in Ω, K = 1,000 Ω, M = 1,000 kΩ.
2. **Abbreviation**

RTL:
Retention Time Limited
This indicates that the retention time is limited for this item. After the discontinuation of this item in production, it will no longer be available.

NR:
Non Repairable Board Ass'y

MGF CHIP:
Metal Glaze Film Chip

C CHIP:
Ceramic Chip

COMPLX CMP:
Complex Component

W FLMPRF:
Wirewound Flameproof

C.B.A.:
Circuit Board Assembly

P.C.B.:
Printed Circuit Board

E.S.D.:
Electrostatically Sensitive Devices

3. **When replacing 0 Ω resistor, a wire can be substituted for it.**

4. LCD Power C.B.A. (Ref. No. E20) replacement note:
LCD Power C.B.A. is supplied as a unit only. Please note that individual parts on it are not supplied. However, the parts with Ref. No. in "EXPLODED VIEWS" are available separately as replacement parts.

5. Connector Cable (Ref. No. P1701) replacement note:
CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE NUMBER LSJA0411 (115 °C).

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PT-40LC12	A
PT-45LC12	B

12.2. MECHANICAL REPLACEMENT PARTS LIST

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PT-40LC12	A
PT-45LC12	B

MECHANICAL REPLACEMENT PARTS

Ref. No.	Part No.	Part Name & Description	Remarks
1	LSYK0905	BACK COVER UNIT	1
2	LSKF0435	AV FRONT DOOR	1
3	TEKC011	SHAFT DUMPER	1
4	LSYY0018	FRONT COVER L UNIT	1
5	LSYY0019	FRONT COVER R UNIT	1
11	LSXA0459-HB	PROJECTION UNIT (A)	2
11	LSXA0465-HB	PROJECTION UNIT (B)	2
12	LSGF0052	LIGHT PREVENTION PLATE A,POLYCARBONATE	1
13	LSMA0604	FRONT BAR	2
15	LSYK0909	SCREEN UNIT (A)	1
15	LSYK0932	SCREEN UNIT (B)	1
16	LSGF0053	LIGHT PREVENTION PLATE B,POLYCARBONATE	2
17	LSSC0569	LAMP GROUNDING PLATE,STEEL	2
18	STL450-3-1BK	CLAMPER	1,3
21	LSYK0959	BASE FRONT PANEL UNIT	2
22	LSYF0533	LAMP COVER UNIT	2
23	LSMA0601	GROUNDING PLATE,STEEL	2
24	LSMF0079	JOINT FILTER	2
25	LSSC0566	FRONT JACK GROUNDING PLATE A,STEEL	2
26	LSSC0567	FRONT JACK GROUNDING PLATE B,STEEL	2
27	LSYF0530	FILTER UNIT	2,5
28	L0AA12A00006	SPEAKER	2
29	LSMF0083	SPACER	2,3
31	LSQL1337	CAUTION LABEL A	2
32	LSQL1338	FILTER LABEL	2
33	LSYK0907	CENTER PANEL UNIT (A)	1
33	LSYK0930	CENTER PANEL UNIT (B)	1
34	TMM14414	STRIKE	1

Ref. No.	Part No.	Part Name & Description	Remarks
35	TMM14415	SUPPORT PLATE,PLASTIC	1
36	LSGQ0059	FAN DUCT	2
37	LSMA0605	FAN PLATE,STEEL	2
38	FBL12G12L2CS	DUCT FAN	2 ⚠
39	LSGF0051	LIGHT PREVENTION PLATE C,POLYCARBONATE	2
41	LSMA0603	TOP PLATE LEFT,STEEL	3
42	LSMA0615	TOP PLATE RIGHT,STEEL	3
44	LSMA0606	OPTICAL BASE PLATE,STEEL	3
45	LSMA0602	TOP PLATE REAR,STEEL	3
46	LSGQ0063	PIPE HOLDER	3
47	LSGQ0060	FRONT BOSS A	3
48	LSSC0558	POWER GROUNDING PLATE,STEEL	2
49	LSMA0591	JOINT PLATE,STEEL	3
50	LSSC0568	GROUNDING PLATE,STEEL	2
51	LSSC0570	POWER GROUNDING PLATE REAR,STEEL	2
52	LSGK0096	PIPE	3
53	TMM6463-1	CLAMPER	2
61	LSGV0039	BACK PANEL (A)	1
61	LSGV0040	BACK PANEL (B)	1
62	LSDL0213	MIRROR (A)	1
62	LSDL0214	MIRROR (B)	1
63	LSMA0588	MIRROR PLATE TOP,STEEL	1
64	LSMA0599	SCREEN BASE PLATE FRONT,STEEL	1
65	LSMA0614	SCREEN BASE PLATE REAR,STEEL	1
66	LSMA0592	MOUNT PLATE,STEEL	1
67	LSMF0218	SPACER C	1
68	LSMF0219	SPACER D	1
71	LSMA0586	BASE PLATE R,STEEL	3
72	LSMA0609	BASE PLATE L,STEEL	3
73	LSMA0613	OPTICAL BASE PLATE,STEEL	3
74	LSGQ0056	FRONT SPEAKER HOLDER L	3
75	LSGQ0055	FRONT SPEAKER HOLDER R	3
76	LSGQ0057	REAR SPEAKER HOLDER	3
77	LSEQ0645	SPEAKER BOX UNIT	3
79	LSJA0349-FE	AC CORD W/PLUG,120V	4 ⚠
80	LSJH0064	REAR JACK PANEL	4
81	LSMP0381	TV FRAME	4
82	LSMA0452	SUPPORT PLATE,STEEL	4
83	LSSC0565	REAR JACK GROUNDING PLATE,STEEL	4
84	LSKU0017	BASE FRAME	3
85	LSMG0113	SPACER	3
86	LSMZ0331	SPACER	2
87	LSMG0114	SPACER	3
101	LSPG1373	PACKING CASE,PAPER (A)	5
101	LSPG1374	PACKING CASE,PAPER (B)	5
102	LSPG1375	PACKING CASE BOTTOM,PAPER	5
103	LSPN0267	TOP CUSHION LEFT,STYROFOAM (A)	5
103	LSPN0271	TOP CUSHION LEFT,STYROFOAM (B)	5
104	LSPN0268	TOP CUSHION RIGHT,STYROFOAM (A)	5
104	LSPN0272	TOP CUSHION RIGHT,STYROFOAM (B)	5
105	LSPN0265	BOTTOM CUSHION LEFT,STYROFOAM	5
106	LSPN0266	BOTTOM CUSHION RIGHT,STYROFOAM	5
107	LSPN0293	CENTER CUSHION,STYROFOAM	5
108	LPE64005A	BAG,POLYETHYLENE	5
109	EUR7603Z80	INGRARED REMOTE CONTROL UNIT	5
110	LSJA0239	RGB CABLE W/PLUG	5

Ref. No.	Part No.	Part Name & Description	Remarks
111	LSQT0583A	INSTRUCTION BOOK	5
202	L6FCNGEH0001	FRONT FAN	2 ⚠ MKE
204	LSMF0078	SEAL FILTER	2 MKE
209	LSJA0439	GROUNIDNG WIRE	2 MKE
220	LSJA0432	CONNECTOR CABLE W/PLUG,5V	2 MKE
271	LSXA0446	LAMP FAN UNIT	2 ⚠ MKE
272	LSRF0008	FAN	2 ⚠
281	VMFS0134	SHEET,NYLON-RAYON	2,4
286	LSJA0414	GROUNDING WIRE	4
293	J0KG00000034	FERRITE CORE	2,4
401	XTV4+16A	TAPPING SCREW,STEEL	1,2,3
402	XTV3+8J	TAPPING SCREW,STEEL	1,2,3,4
403	XTW3+8PR	SCREW,STEEL	2
404	XTV4+14J	SCREW,STEEL	1,2,3
405	XTV4+20A	TAPPING SCREW,STEEL	2
406	XTV3+10J	TAPPING SCREW,SCREW	1
407	XTS3+8JFZ	TAPPING SCREW,STEEL	1
408	XTN4+12AR	SCREW,STEEL	4
409	XTV3+10JR	SCREW,STEEL	4
410	XYN3+F10S	SCREW W/WASHER,STEEL	2
413	XSB4+35	SCREW,STEEL	2 MKE
418	XTN3+4F	SCREW,STEEL	2 MKE
432	XTV3+25G	SCREW,STEEL	2 MKE
435	XTV3+20J	TAPPING SCREW,STEEL	2
439	XWG46F115	WASHER,STEEL	2
701	EYF52BC	FUSE HOLDER	2,4
702	LML69002A	CLAMPER	4
705	LSJA0438	GROUNDING WIRE	4
706	TMM7464-1	CLAMPER	4
710	LSJA0428	CONNECTOR CABLE W/PLUG,5V	4
712	VMFS0320	SPACER	4
713	VMTS0059	CUSHION,RUBBER	4
714	VMTS0035	CUSHION,RUBBER	4
718	LSJA0429	CONNECTOR CABLE W/PLUG,5V	4
721	LSMF0057	SHEET,NYLON-RAYON	4
723	LSLQ0307	FERRITE CORE	4
725	LSJA0431	CONNECTOR CABLE W/PLUG,5V	4
726	LSJA0430	CONNECTOR CABLE W/PLUG,5V	4
727	LSJA0433	CONNECTOR CABLE W/PLUG,3.3V	2
728	LSSC0559	HEAT SINK	2
729	TMM5439-1	CLAMPER	2
731	PNA4611M00HD	INFRARED RECEIVER UNIT	1
E10	LSEP3067A	TV MAIN C.B.A.	4
E20	LSEB3062A1	LCD POWER C.B.A. NR	2
E30	LSEP3065A	AUDIO POWER C.B.A.	2 RTL
E40	LSEP3068A	FRONT JACK C.B.A.	2 RTL
E50	LSEP3072A	RGB JACK C.B.A.	2 RTL
E60	LSEP3069A	REAR JACK C.B.A.	4
E70	LSEP3071A	OPERATION C.B.A.	1 RTL
E80	LSEP3081A	FRONT THERMISTOR C.B.A.	2 RTL
E90	LSEP3082A	LAMP COVER SWITCH C.B.A.	2 RTL
E110	LSEP3080A1	LAMP THERMISTOR C.B.A.	2 RTL MKE

SERVICE FIXTURES AND TOOLS

Ref. No.	Part No.	Part Name & Description	Remarks
	LSYF0532	FILTER TOOL	
	LSUA0035	EXTENSION CABLE	

12.3. ELECTRICAL REPLACEMENT PARTS LIST

PRINTED CIRCUIT BOARD ASSEMBLY

Ref. No.	Part No.	Part Name & Description	Remarks
E10	LSEP3067A	TV MAIN C.B.A.	E.S.D.
E20	LSEB3062A1	LCD POWER C.B.A. NR	
E30	LSEP3065A	AUDIO POWER C.B.A.	RTL
E40	LSEP3068A	FRONT JACK C.B.A.	RTL
E50	LSEP3072A	RGB JACK C.B.A.	RTL
E60	LSEP3069A	REAR JACK C.B.A.	E.S.D.
E70	LSEP3071A	OPERATION C.B.A.	RTL
E80	LSEP3081A	FRONT THERMISTOR C.B.A.	RTL
E90	LSEP3082A	LAMP COVER SWITCH C.B.A.	RTL
E110	LSEP3080A1	LAMP THERMISTOR C.B.A.	RTL MKE

12.3.1. TV MAIN C.B.A.

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
286	LSJA0414	GROUNDING WIRE	
293	J0KG00000034	FERRITE CORE	
702	LML69002A	CLAMPER	
705	LSJA0438	GROUNDING WIRE	
706	TMM7464-1	CLAMPER	
710	LSJA0428	CONNECTOR CABLE W/PLUG,5V	
712	VMFS0320	SPACER	
713	VMTS0059	CUSHION,RUBBER	
718	LSJA0429	CONNECTOR CABLE W/PLUG,5V	

12.3.2. LCD POWER C.B.A.

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L1309	LSLQ0307	FERRITE CORE	
L1709	LSLQ0307	FERRITE CORE	
L1710	LSLQ0392	FERRITE CORE	
L1711	LSLQ0392	FERRITE CORE	
L1712	LSLQ0307	FERRITE CORE	
L1713	LSLQ0307	FERRITE CORE	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P1701	LSJA0411	CONNECTOR CABLE W/PLUG,120V	⚠
P1702	LSJA0412	CONNECTOR CABLE W/PLUG,16V	

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
272	LSRF0008	FAN	⚠
435	XTV3+20J	TAPPING SCREW,STEEL	

12.3.3. AUDIO POWER C.B.A.

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D1101	B0EBNR000007	DIODE SI	⚠

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C1101	LSCE0134	ELECTROLYTIC 50V 4700UF	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P1101	VJPS0704	CONNECTOR 2P	
P1102	LSJA0417	CONNECTOR CABLE W/PLUG,33V	

FUSE & PROTECTOR

Ref. No.	Part No.	Part Name & Description	Remarks
F1101	VSFS0003A16	FUSE 125V 1.6A	⚠
F1101	K5D162AB0003	FUSE 125V 1.6A	⚠
F1101	K5D162AQ0004	FUSE 125V 1.6A	⚠

TRANSFORMER

Ref. No.	Part No.	Part Name & Description	Remarks
T1103	ETP59VQU21PA	TRANSFORMER	⚠

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
410	XYN3+F10S	SCREW W/WASHER,STEEL	
701	EYF52BC	FUSE HOLDER	
728	LSSC0559	HEAT SINK	
729	TMM5439-1	CLAMPER	

12.3.4. FRONT JACK C.B.A.

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R3951	ERDS2TJ750	CARBON 1/4W 75	
R3952	ERDS2TJ750	CARBON 1/4W 75	
R3953	ERDS2TJ750	CARBON 1/4W 75	
R4590	ERDS2TJ122	CARBON 1/4W 1.2K	
R4591	ERDS2TJ102	CARBON 1/4W 1K	
R4592	ERDS2TJ122	CARBON 1/4W 1.2K	
R4593	ERDS2TJ102	CARBON 1/4W 1K	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P3902	LSJA0425	CONNECTOR CABLE W/PLUG,9V	
P4591	LSJA0426	CONNECTOR CABLE W/PLUG,27V	
P4801	LSJA0427	CONNECTOR CABLE W/PLUG,5V	

JACKS

Ref. No.	Part No.	Part Name & Description	Remarks
JK4590	K2HC103A0017	EARPHONE JACK SOCKET	
JK4801	K1U412A00008	S-JACK SOCKET	
JK4802	K2HC103A0017	EARPHONE JACK SOCKET	

12.3.5. RGB JACK C.B.A.

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D3901	B0BD6R800007	DIODE ZENER 6.8V	
D3901	NNCD6.2G-T1	DIODE ZENER CHIP 6.2V	

FILTERS

Ref. No.	Part No.	Part Name & Description	Remarks
FL3901	J0MAB0000055	FILTER	
FL3902	J0MAB0000055	FILTER	
FL3903	J0MAB0000055	FILTER	

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L3902	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
L3903	ERJ3GEY0R00V	MGF CHIP 1/16W 0	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P3901	K1KA11B00039	CONNECTOR 11P	

JACKS

Ref. No.	Part No.	Part Name & Description	Remarks
JK3901	K1FB115A0015	D-SUB MINI JACK SOCKET	

12.3.6. REAR JACK C.B.A.

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
281	VMFS0134	SHEET,NYLON-RAYON	
713	VMTS0059	CUSHION,RUBBER	
714	VMTS0035	CUSHION,RUBBER	
721	LSMF0057	SHEET,NYLON-RAYON	
723	LSLQ0307	FERRITE CORE	
725	LSJA0431	CONNECTOR CABLE W/PLUG,5V	
726	LSJA0430	CONNECTOR CABLE W/PLUG,5V	

12.3.7. OPERATION C.B.A.

TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q6301	2SA1309AIRTA	TRANSISTOR SI PNP	
Q6301	2SA1309AISTA	TRANSISTOR SI PNP	
Q6301	2SA1309ARA	TRANSISTOR SI PNP	
Q6301	2SA1309ASA	TRANSISTOR SI PNP	
Q6302	2SA1309AIRTA	TRANSISTOR SI PNP	
Q6302	2SA1309AISTA	TRANSISTOR SI PNP	
Q6302	2SA1309ARA	TRANSISTOR SI PNP	
Q6302	2SA1309ASA	TRANSISTOR SI PNP	

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D6301	B3AGA0000072	LIGHT EMITTING DIODE RED/GREEN	
D6303	B3AAA0000538	LIGHT EMITTING DIODE RED	
D6304	B3AAA0000538	LIGHT EMITTING DIODE RED	

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R6315	ERDS2TJ470T	CARBON 1/4W 47	
R6316	ERDS2TJ391	CARBON 1/4W 390	
R6317	ERDS2TJ221	CARBON 1/4W 220	
R6318	ERDS2TJ471	CARBON 1/4W 470	
R6319	ERDS2TJ471	CARBON 1/4W 470	
R6326	ERDS2TJ182	CARBON 1/4W 1.8K	
R6327	ERDS2TJ392	CARBON 1/4W 3.9K	
R6328	ERDS2TJ182	CARBON 1/4W 1.8K	
R6329	ERDS2TJ103	CARBON 1/4W 10K	
R6330	ERDS2TJ103	CARBON 1/4W 10K	
R6331	ERDS2TJ103	CARBON 1/4W 10K	
R6332	ERDS2TJ103	CARBON 1/4W 10K	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C6302	ECEA0JKA470	ELECTROLYTIC 6.3V 47UF	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P6303	K1KA09B00064	CONNECTOR 9P	

SWITCHES

Ref. No.	Part No.	Part Name & Description	Remarks
SW6301	EVQ11G05R	PUSH SWITCH	
SW6302	EVQ11G05R	PUSH SWITCH	
SW6304	EVQ11G05R	PUSH SWITCH	
SW6305	EVQ11G05R	PUSH SWITCH	
SW6311	EVQ11G05R	PUSH SWITCH	

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
731	PNA4611M00HD	INFRARED RECEIVER UNIT	

12.3.8. FRONT THERMISTOR C.B.A.

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R2911	D4CA35030002	THERMISTER	⚠

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P2911	K1KA04B00132	CONNECTOR 4P	
P2912	K1KA02B00130	CONNECTOR 2P	

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
727	LSJA0433	CONNECTOR CABLE W/PLUG,3.3V	

12.3.9. LAMP COVER SWITCH C.B.A.

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P2921	K1KA02B00130	CONNECTOR 2P	

SWITCHES

Ref. No.	Part No.	Part Name & Description	Remarks
SW2921	K0L1BA000070	PUSH SWITCH	

12.3.10. LAMP THERMISTOR C.B.A.

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R2901	D4CE31330001	THERMISTOR	⚠ MKE

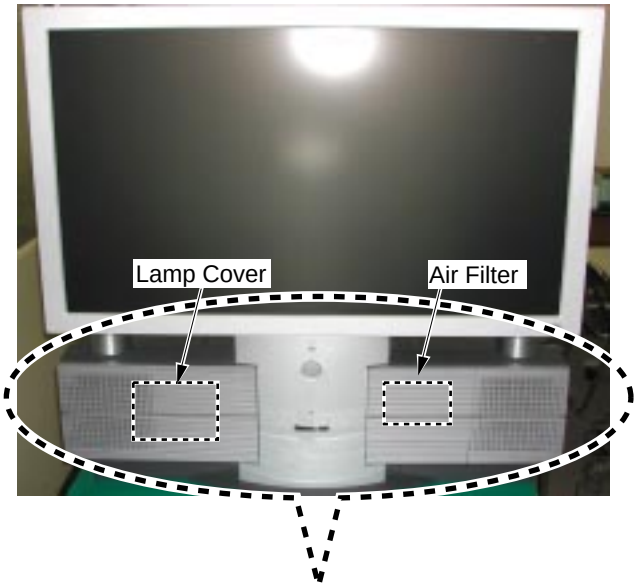
PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P2901	LSJA0421	CONNECTOR CABLE W/PLUG,3.3V	MKE

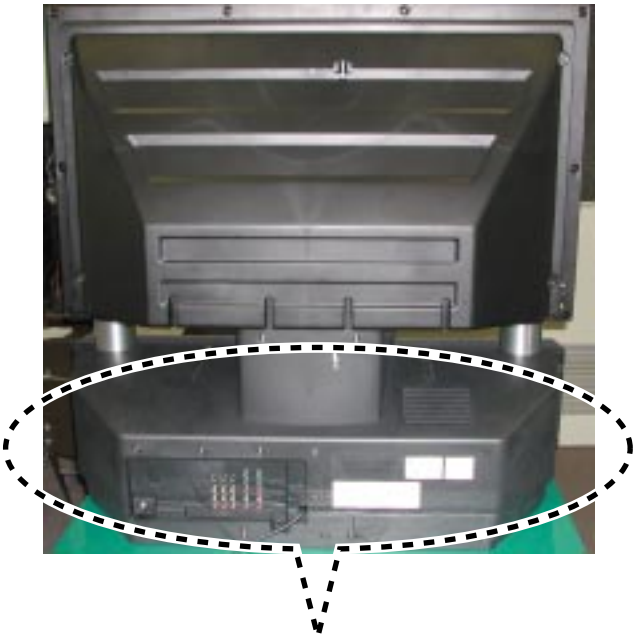
13. SCHEMATIC DIAGRAMS FOR PRINTING WITH LETTER SIZE

Main Parts Location

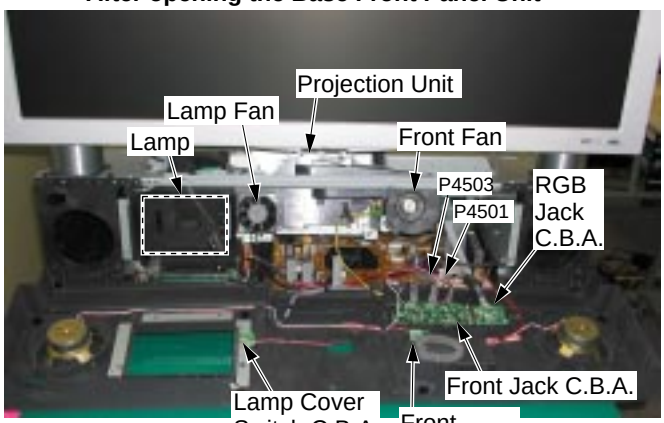
<Front View>



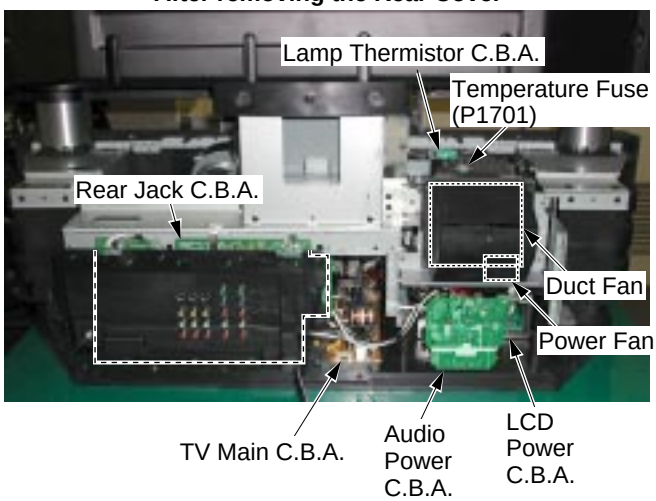
<Rear View>



<After opening the Base Front Panel Unit>



<After removing the Rear Cover>



Error Indication Information

Each LED indications facilitates finding the cause of the error. When an error is detected, each LED on the Center Panel will light up or flash when the AC Cord is plugged in. The detected error data will not be stored in the EEPROM. This data is cleared after the AC Cord is unplugged.

Error No.	Error Information	ERROR DESCRIPTION	POWER LED	TEMP LED	LAMP LED	OSD	LAMP OFF
1)	**Front Fan stop or Lamp Fan stop**	IC2301(pin12) detects the Front FAN stop or Lamp FAN stop, then indicates the error when the Front FAN or Lamp FAN is stopped.	flashes orange once every 5 seconds	-	-		○
2)	**Lamp Cover open**	IC2301(pin76) detects the Lamp Cover Unit condition (open or close), then indicates the error when the Lamp Cover Unit is open.	flashes orange twice every 5 seconds	-	-		○
3)	**Temperature Sensor short or open**	IC2301(pin74 and 75) detects open or short of the Temperature Sensor (R2911) on Front Thermistor C.B.A., then indicates the error when Temperature Sensor is open or shorted. (The error is not detected for 1 minute after Lamp ON.)	-	flashes once every 5 seconds	-		○
4)	**Abnormal Temperature**	IC2301(pin74 and 75) detects the temperature attached near the Front FAN by the Temperature Sensor (R2911) on Front Thermistor C.B.A., then indicates the error when the temperature becomes more than 43℃. (The error is not detected for 1 minute after Lamp ON.)	-	flashes twice every 5 seconds	-		○
5)	**Power Ballast Error (abnormal Lamp voltage)**	IC2301(pin11) detects the error of the Lamp, then indicates the error when the Lamp is short-circuit.	-	-	flashes twice every 5 seconds		○
6)	**Power Ballast Error (abnormal temperature)**	IC2301(pin11) detects the error of LCD Power C.B.A., then indicates the error when the temperature fuse (117℃) in LCD Power C.B.A. is open.	-	-	flashes 3 times every 5 seconds		○
7)	**Power Ballast Error (other causes)**	IC2301(pin11) detects the error of LCD Power C.B.A. and Lamp, then indicates the error when an inner malfunction of LCD Power C.B.A. occurs, the Lamp voltage becomes more than 130V or less than 30V, Lamp current becomes more than 5A, or the Lamp is cracked.	-	-	flashes 4 times every 5 seconds		○
8)	**Abnormal Voltage on 16 V line of LCD Main C.B.A.**	IC2301(pin48) detects +16V line voltage on LCD Main C.B.A., then indicates the error when the voltage becomes less than +13V.	-	flashes once every 5 seconds	flashes once every 5 seconds		
9)	**Abnormal Voltage on 14 V line of LCD Main C.B.A.**	IC2301(pin47) detects +14V line voltage on LCD Main C.B.A., then indicates the error when the voltage becomes less than +11V.	-	flashes twice every 5 seconds	flashes twice every 5 seconds		
10)	**Abnormal Voltage on 7 V line of LCD Main C.B.A.**	IC2301(pin45) detects +7V line voltage on LCD Main C.B.A., then indicates the error when the voltage becomes less than +5.7V.	-	flashes 3 times every 5 seconds	flashes 3 times every 5 seconds		
11)	**Abnormal Voltage on 3.3 V line of LCD Main C.B.A.**	IC2301(pin44) detects +3.3V line voltage on LCD Main C.B.A., then indicates the error when the voltage becomes less than +2.5V.	-	flashes 4 times every 5 seconds	flashes 4 times every 5 seconds		
12)	**Temperature Sensor short or open**	IC6001(pin86 and 87) detects open or short of the Temperature Sensor (R2901) on Lamp Thermistor C.B.A., then indicates the error when Temperature Sensor is open or shorted. (The error is not detected for 4 minutes after Lamp ON.)	-	flashes 3 times every 5 seconds	-		○
13)	**Abnormal Temperature**	IC2301(pin74 and 75) detects the temperature attached near the Lamp by the Temperature Sensor (R2901) on Lamp Thermistor C.B.A., then indicates the error when the temperature becomes more than 60℃. (The error is not detected for 4 minutes after Lamp ON.)	-	flashes 4 times every 5 seconds	-		○
14)	**Duct Fan stop**	IC6001(pin85) detects the Duct FAN stop, then indicates the error when the Duct FAN is stopped.	flashes orange 3 times every 5 seconds	-	-		○
15)	**Clogged air filter more than 90%**	IC2301(pin82) detects the clogged air filter, then indicates the error when the air filter is clogged 90%.	-	flashes 5times every 5 seconds	-	○	○
16)	**The failure of Lamp light up**	IC2301 (pin11) detects the failure of light up processing of the Lamp, then the POWER LED is changed as follows. 1) POWER LED flashes green for 140 seconds (while turning on). 2) POWER LED flashes red for 60 seconds (while cooling). 3) POWER LED lights up red (standby). **Note:** If the Lamp will not light after attempting turning on the power 2 or 3 times, the Lamp, the LCD Power C.B.A. or the LCD Main C.B.A. may be defective.	flashes green for 140 seconds. ⬇ flashing red for 60 seconds. ⬇ light up red.				
17)	**Request for Lamp Replacement**	When accumulated operation time of the the Lamp reaches 5000 hours, OSD (replacing the Lamp) appears on the screen. **Note:** The Lamp time is stored in EEPROM (IC2305).	-	-	lights up	○	
18)	**Request for Filter Cleaning**	When accumulated operation time of the Air Filter reaches 400 hours, OSD (cleaning the Air Filter) appears on the screen. **Note:** The Filter time is stored in EEPROM (IC2305).	-	-	-	○	
—	**Forced cooling**	During forced cooling, this indication is indicated.	flashes red for 10 minutes	-	flashes 5 times every 5 seconds		

Note:

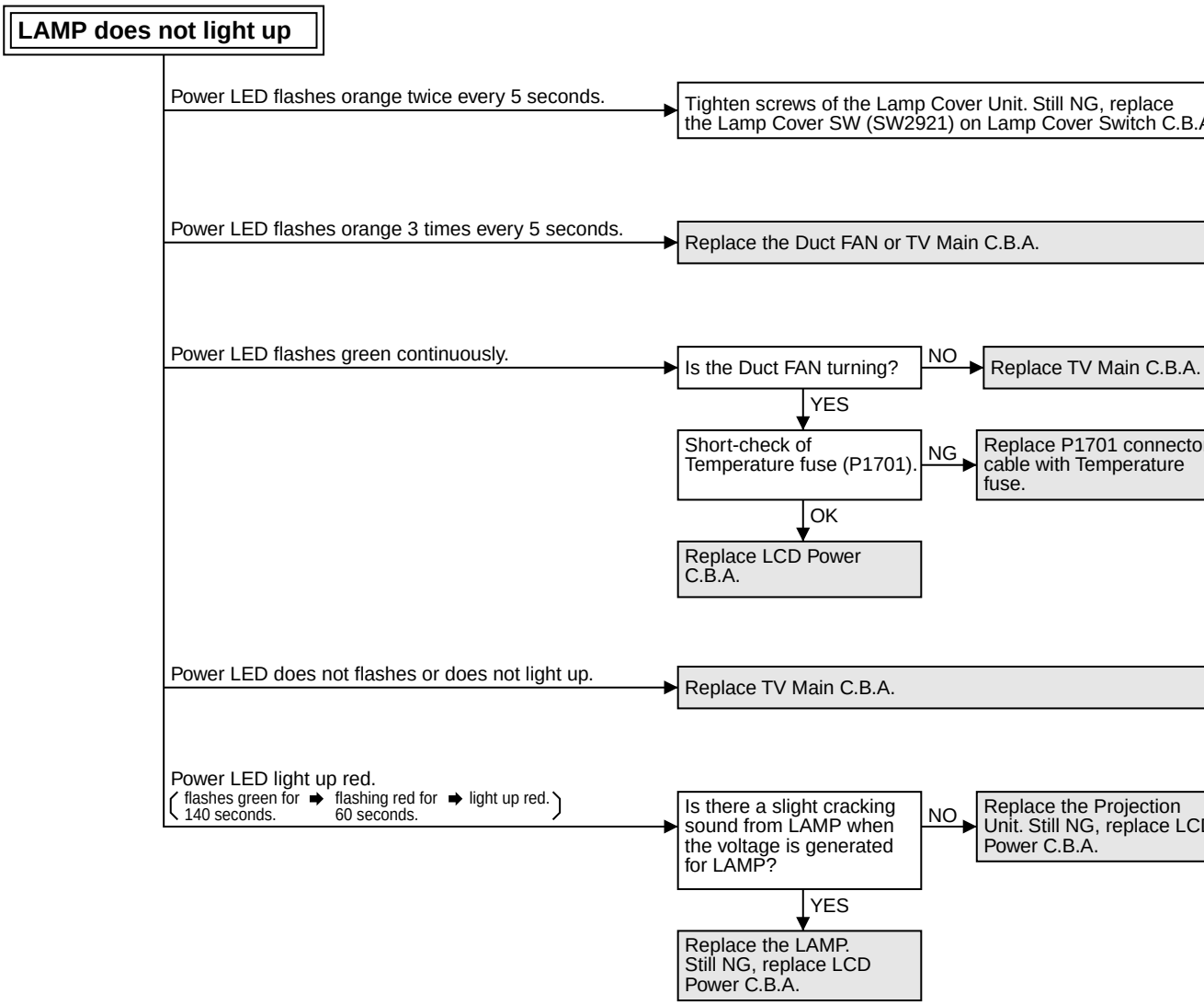
1. When any of the above errors has occurred, the LED will flash as shown above every 5 seconds.
2. When two or more errors have occurred at the same time, the LED will light up or flash as shown above, and then change to another every 5 seconds in turn.
3. LAMP OFF: The LED will flash right after the Lamp goes off.
4. Warning OSD appears when the Air Filter is clogged 90%, accumulated operation time of the Lamp reaches 5000 hours, or accumulated operation time of the Air Filter reaches 400 hours.
5. IC2301 is mounted on LCD Main C.B.A. which is includes in the Projection Unit.
6. IC6001 is mounted on TV Main C.B.A.

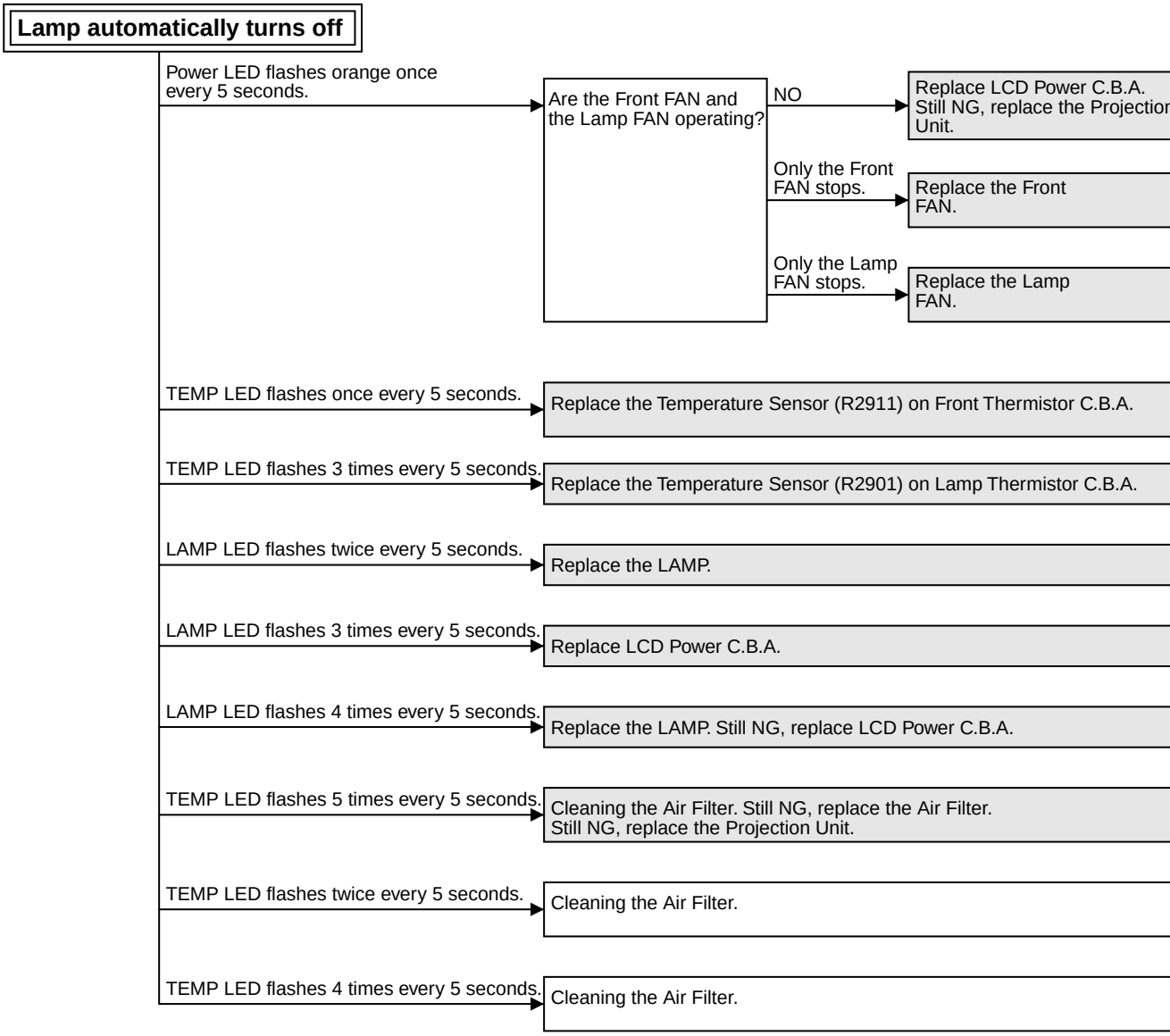
How to solve the problem indicated by the Error Indication of LED

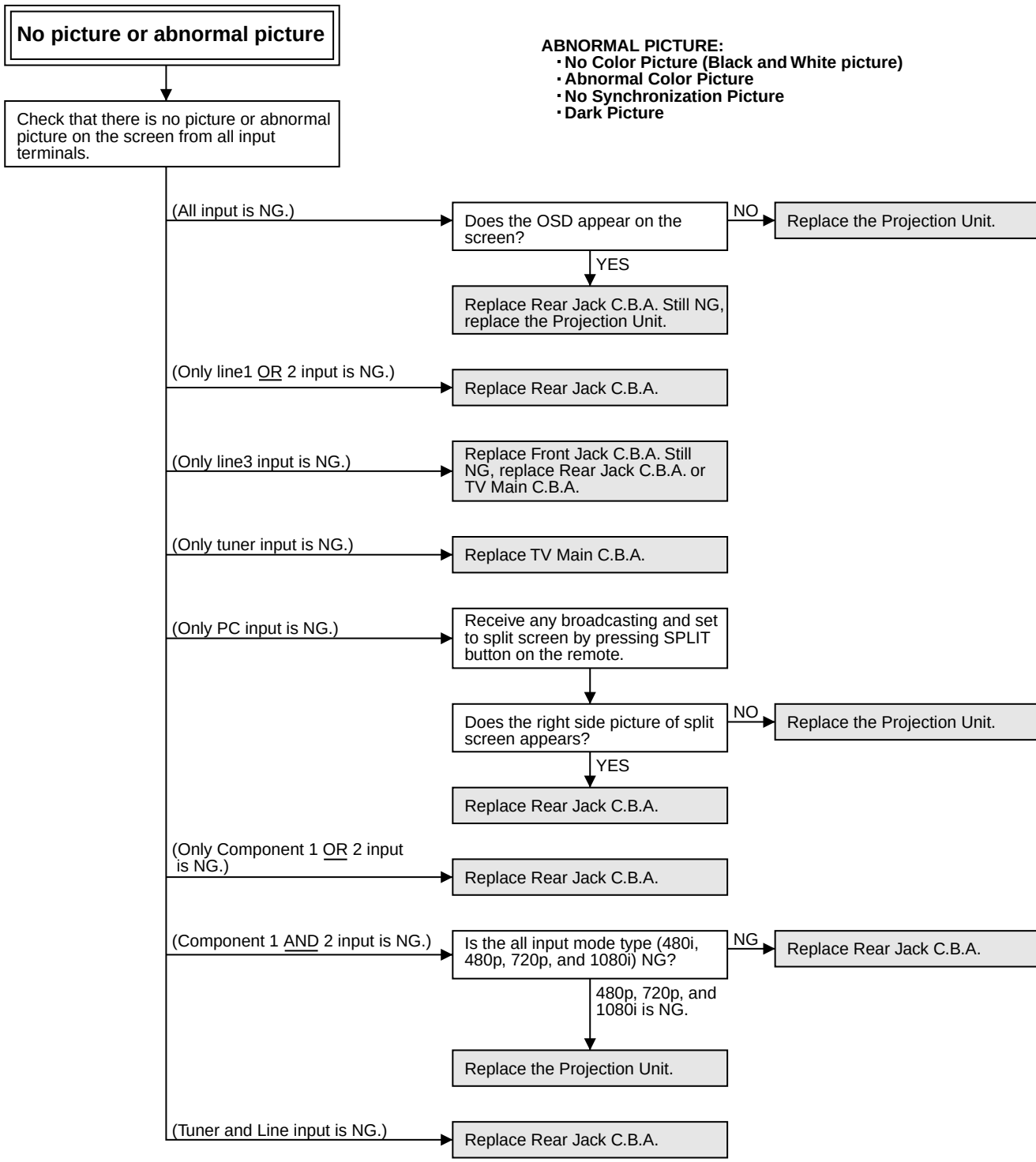
Error No.	Symptom	Problem	Possible Solution
1)	Lamp automatically turns off.	Cooling Fan (Front Fan and/or Lamp Fan) malfunction.	Are the Front FAN and the Lamp FAN operating? NO → Replace LCD Power C.B.A. Still NG, replace the Projection Unit. Only the Front FAN stops. → Replace the Front Fan. Only the Lamp FAN stops. → Replace the Lamp Fan.
2)	Lamp automatically turns off or Lamp does not light up.	Misinstalled Lamp Cover Unit.	Tighten screws of the Lamp Cover Unit. Still NG, replace the LAMP Cover SW (SW2921) on Lamp Cover Switch C.B.A.
3)	Lamp automatically turns off.	The temperature sensor(R2911) on Front Thermistor C.B.A. attached near the Front Fan is short or open.	Replace the Temperature Sensor (R2911) on Front Thermistor C.B.A.
4)	Lamp automatically turns off.	1. Clogged air filter. 2. Blocked air intake. 3. The surrounding temperature of the place of use may be too high.	Cleaning the Air Filter.
5)	Lamp does not light up.	Lamp voltage is not correct due to short of the Lamp.	Replace the Lamp.
6)	Lamp automatically turns off due to abnormally high internal temperature.	Abnormal temperature rise.	Replace LCD Power C.B.A.
7)	Lamp automatically turns off or Lamp does not light up.	1. The Lamp voltage becomes more over 130V or less than 30V. 2. The Lamp current becomes more over 5A. 3. The Lamp is defective (crack.) 4. Other cause. **Note:** If the Lamp will not light up after attempting turning on the main power 2 or 3 times, the Lamp may be defective.	Replace the Lamp. Still NG, replace LCD Power C.B.A.
8)	White screen is displayed.	+16V line on LCD Main C.B.A. error. ↓ No output voltage for IC1901(+15.3V REG.) on LCD Main C.B.A. ↓ LCD Drive Circuit on LCD Main C.B.A. malfunction.	Replace the Projection Unit. Still NG, replace LCD Power C.B.A. **Note:** The Projection Unit includes LCD Main C.B.A.
9)	Front FAN and Lamp FAN are stopped.	+14V line on LCD Main C.B.A. error. ↓ No output voltage for IC1961(Drive for Front Fan) and IC1962(Drive for Lamp Fan.) on LCD Main C.B.A.	Replace LCD Power C.B.A. Still NG, replace the Projection Unit. **Note:** The Projection Unit includes LCD Main C.B.A.
10)	Abnormal picture. (OSD appears normally.)	+7V line on LCD Main C.B.A. error. ↓ No output voltage for IC2501(+3.3V REG.) and IC2705(+3.3V REG.) on LCD Main C.B.A. ↓ IC2502(Main A/D Converter) and IC2706 (Sub A/D Converter) on LCD Main C.B.A. malfunction.	Replace the Projection Unit. Still NG, replace LCD Power C.B.A. **Note:** The Projection Unit includes LCD Main C.B.A.
11)	Abnormal picture. (OSD is also abnormal.)	+3.3V line on LCD Main C.B.A. error. ↓ IC9503(Timing Generator), IC9508(Sub Scaler), IC9510(OSD), etc on LCD Main C.B.A. malfunction.	Replace the Projection Unit. Still NG, replace LCD Power C.B.A. **Note:** The Projection Unit includes LCD Main C.B.A.
12)	Lamp automatically turns off.	The temperature sensor (R2901) on Lamp Thermistor C.B.A. attached on the Lamp house unit is short or open.	Replace the Temperature Sensor (R2901) on Lamp Thermistor C.B.A.
13)	Lamp automatically turns off.	1. Clogged air filter. 2. Blocked air intake. 3. The surrounding temperature of the place of use may be too high.	Cleaning the Air Filter.
14)	Lamp does not light up.	Cooling Fan (Duct Fan) malfunction.	Replace the Duct FAN. Still NG, replace TV Main C.B.A.
15)	OSD (Clogged Air Filter) appears on the screen.	Clogged air filter more over 90%.	Cleaning the Air Filter. Still NG, replace the Air Filter. Sill NG, replace the Front FAN. Still NG, replace the Projection Unit. **Note:** The Projection Unit includes LCD Main C.B.A.
16)	Lamp does not light up after attempting turning on the POWER 2 or 3 times.	1. The Lamp is defective. 2. The Lamp has been out of life. 3. LCD Power C.B.A. is defective. 4. LCD Main C.B.A. is defective.	Replace the Lamp. Still NG, LCD Power C.B.A. Still NG, replace the Projection Unit. **Note:** The Projection Unit includes LCD Main C.B.A.
17)	OSD (Replacing the Lamp) appears on the screen.	Accumulated operation time of the Lamp reaches 5000 hours.	Replace the Lamp.
18)	OSD (Cleaning the Air Filter) appears on the screen.	Accumulated operation time of the Air Filter reaches 400 hours.	Cleaning the Air Filter.

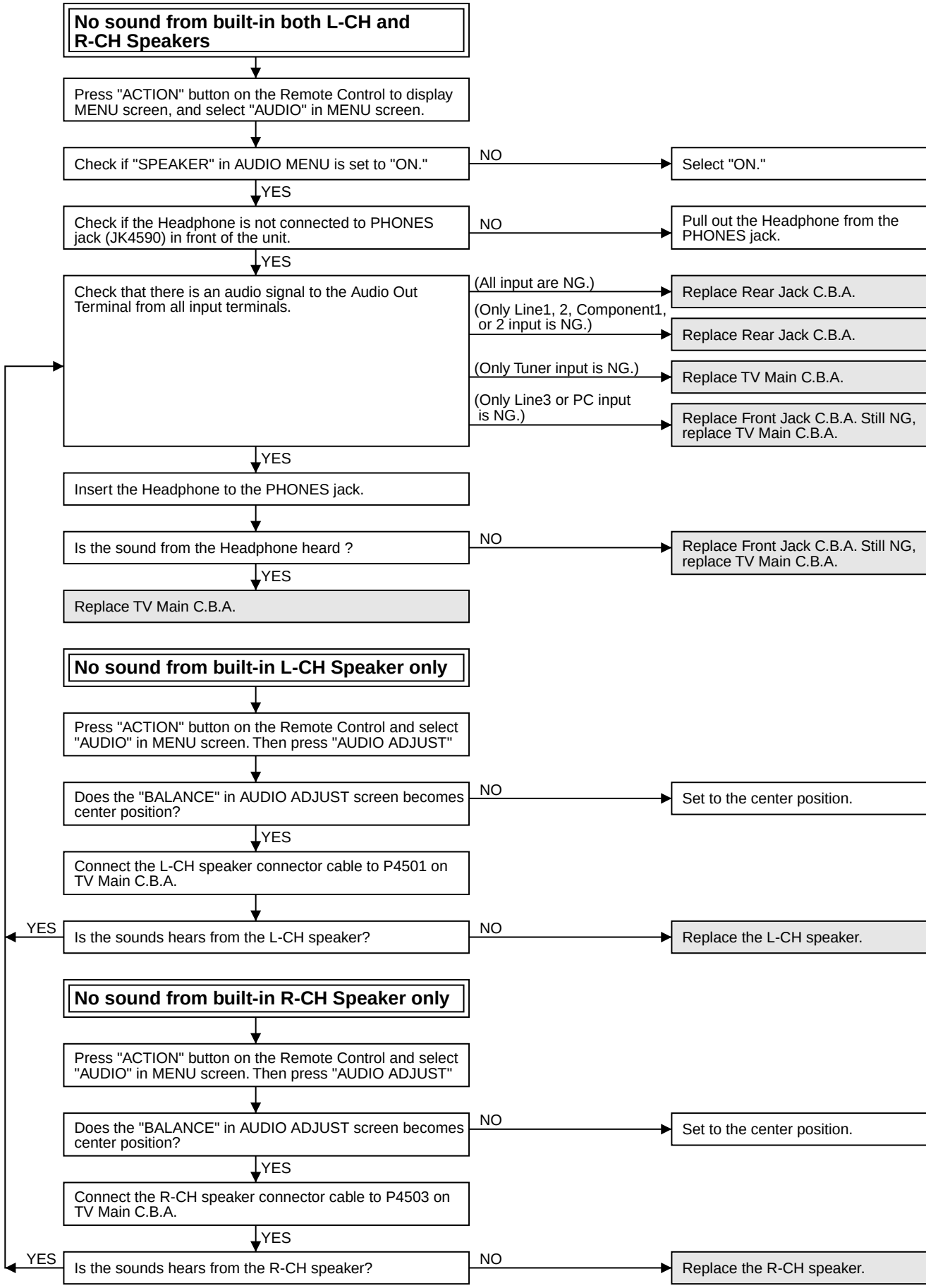
Note:

Before performing the troubleshooting, confirm that all connector cables in the unit are connected to connectors correctly.


LAMP does not light up
Power LED flashes orange twice every 5 seconds.
Tighten screws of the Lamp Cover Unit. Still NG, replace the Lamp Cover SW (SW2921) on Lamp Cover Switch C.B.A.
Power LED flashes orange 3 times every 5 seconds.
Replace the Duct FAN or TV Main C.B.A.
Power LED flashes green continuously.
Is the Duct FAN turning?
NO
Replace TV Main C.B.A.
YES
Short-check of Temperature fuse (P1701).
NG
Replace P1701 connector cable with Temperature fuse.
OK
Replace LCD Power C.B.A.
Power LED does not flashes or does not light up.
Replace TV Main C.B.A.
Power LED light up red.
flashes green for 140 seconds.
flashing red for 60 seconds.
light up red.
Is there a slight cracking sound from LAMP when the voltage is generated for LAMP?
NO
Replace the Projection Unit. Still NG, replace LCD Power C.B.A.
YES
Replace the LAMP. Still NG, replace LCD Power C.B.A.

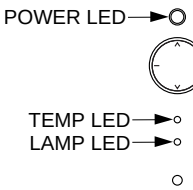

Lamp automatically turns off
Power LED flashes orange once every 5 seconds.
Are the Front FAN and the Lamp FAN operating?
NO
Replace LCD Power C.B.A. Still NG, replace the Projection Unit.
Only the Front FAN stops.
Replace the Front FAN.
Only the Lamp FAN stops.
Replace the Lamp FAN.
TEMP LED flashes once every 5 seconds.
Replace the Temperature Sensor (R2911) on Front Thermistor C.B.A.
TEMP LED flashes 3 times every 5 seconds.
Replace the Temperature Sensor (R2901) on Lamp Thermistor C.B.A.
LAMP LED flashes twice every 5 seconds.
Replace the LAMP.
LAMP LED flashes 3 times every 5 seconds.
Replace LCD Power C.B.A.
LAMP LED flashes 4 times every 5 seconds.
Replace the LAMP. Still NG, replace LCD Power C.B.A.
TEMP LED flashes 5 times every 5 seconds.
Cleaning the Air Filter. Still NG, replace the Air Filter. Still NG, replace the Projection Unit.
TEMP LED flashes twice every 5 seconds.
Cleaning the Air Filter.
TEMP LED flashes 4 times every 5 seconds.
Cleaning the Air Filter.


No picture or abnormal picture
ABNORMAL PICTURE:
· No Color Picture (Black and White picture)
· Abnormal Color Picture
· No Synchronization Picture
· Dark Picture
Check that there is no picture or abnormal picture on the screen from all input terminals.
(All input is NG.)
Does the OSD appear on the screen?
NO
Replace the Projection Unit.
YES
Replace Rear Jack C.B.A. Still NG, replace the Projection Unit.
(Only line1 OR 2 input is NG.)
Replace Rear Jack C.B.A.
(Only line3 input is NG.)
Replace Front Jack C.B.A. Still NG, replace Rear Jack C.B.A. or TV Main C.B.A.
(Only tuner input is NG.)
Replace TV Main C.B.A.
(Only PC input is NG.)
Receive any broadcasting and set to split screen by pressing SPLIT button on the remote.
Does the right side picture of split screen appears?
NO
Replace the Projection Unit.
YES
Replace Rear Jack C.B.A.
(Only Component 1 OR 2 input is NG.)
Replace Rear Jack C.B.A.
(Component 1 AND 2 input is NG.)
Is the all input mode type (480i, 480p, 720p, and 1080i) NG?
NG
Replace Rear Jack C.B.A.
480p, 720p, and 1080i is NG.
Replace the Projection Unit.
(Tuner and Line input is NG.)
Replace Rear Jack C.B.A.


No sound from built-in both L-CH and R-CH Speakers
Press "ACTION" button on the Remote Control to display MENU screen, and select "AUDIO" in MENU screen.
Check if "SPEAKER" in AUDIO MENU is set to "ON."
NO
Select "ON."
YES
Check if the Headphone is not connected to PHONES jack (JK4590) in front of the unit.
NO
Pull out the Headphone from the PHONES jack.
YES
Check that there is an audio signal to the Audio Out Terminal from all input terminals.
(All input are NG.)
Replace Rear Jack C.B.A.
(Only Line1, 2, Component1, or 2 input is NG.)
Replace Rear Jack C.B.A.
(Only Tuner input is NG.)
Replace TV Main C.B.A.
(Only Line3 or PC input is NG.)
Replace Front Jack C.B.A. Still NG, replace TV Main C.B.A.
YES
Insert the Headphone to the PHONES jack.
Is the sound from the Headphone heard ?
NO
Replace Front Jack C.B.A. Still NG, replace TV Main C.B.A.
YES
Replace TV Main C.B.A.
No sound from built-in L-CH Speaker only
Press "ACTION" button on the Remote Control and select "AUDIO" in MENU screen. Then press "AUDIO ADJUST"
Does the "BALANCE" in AUDIO ADJUST screen becomes center position?
NO
Set to the center position.
YES
Connect the L-CH speaker connector cable to P4501 on TV Main C.B.A.
YES
Is the sounds hears from the L-CH speaker?
NO
Replace the L-CH speaker.
No sound from built-in R-CH Speaker only
Press "ACTION" button on the Remote Control and select "AUDIO" in MENU screen. Then press "AUDIO ADJUST"
Does the "BALANCE" in AUDIO ADJUST screen becomes center position?
NO
Set to the center position.
YES
Connect the R-CH speaker connector cable to P4503 on TV Main C.B.A.
YES
YES
Is the sounds hears from the R-CH speaker?
NO
Replace the R-CH speaker.

LED INDICATIONS FOR ERROR CONDITION

Each LED indication facilitates finding the cause of the error.
When an error is detected, each LED on the Center Panel will light up or flash when the AC Cord is plugged in.
The detected error data will not be stored in the EEPROM. This data is cleared after the AC Cord is unplugged.



<Center Panel of the unit>

Fig. 2-1

Error No.	Error Information	ERROR DESCRIPTION	POWER LED	TEMP LED	LAMP LED	OSD	LAMP OFF
1)	**Front Fan stop or Lamp Fan stop**	IC2301(pin12) detects the Front FAN stop or Lamp FAN stop, then indicates the error when the Front FAN or Lamp FAN is stopped.	flashes orange once every 5 seconds	-	-		○
2)	**Lamp Cover open**	IC2301(pin76) detects the Lamp Cover Unit condition (open or close), then indicates the error when the Lamp Cover Unit is open.	flashes orange twice every 5 seconds	-	-		○
3)	**Temperature Sensor short or open**	IC2301(pin74 and 75) detects open or short of the Temperature Sensor (R2911) on Front Thermistor C.B.A., then indicates the error when Temperature Sensor is open or shorted. (The error is not detected for 1 minute after Lamp ON.)	-	flashes once every 5 seconds	-		○
4)	**Abnormal Temperature**	IC2301(pin74 and 75) detects the temperature attached near the Front FAN by the Temperature Sensor (R2911) on Front Thermistor C.B.A., then indicates the error when the temperature becomes more than 43℃. (The error is not detected for 1 minute after Lamp ON.)	-	flashes twice every 5 seconds	-		○
5)	**Power Ballast Error (abnormal Lamp voltage)**	IC2301(pin11) detects the error of the Lamp, then indicates the error when the Lamp is short-circuit.	-	-	flashes twice every 5 seconds		○
6)	**Power Ballast Error (abnormal temperature)**	IC2301(pin11) detects the error of LCD Power C.B.A., then indicates the error when the temperature fuse (117℃) in LCD Power C.B.A. is open.	-	-	flashes 3 times every 5 seconds		○
7)	**Power Ballast Error (other causes)**	IC2301(pin11) detects the error of LCD Power C.B.A. and Lamp, then indicates the error when an inner malfunction of LCD Power C.B.A. occurs, the Lamp voltage becomes more than 130V or less than 30V, Lamp current becomes more than 5A, or the Lamp is cracked.	-	-	flashes 4 times every 5 seconds		○
8)	**Abnormal Voltage on 16 V line of LCD Main C.B.A.**	IC2301(pin48) detects +16V line voltage on LCD Main C.B.A., then indicates the error when the voltage becomes less than +13V.	-	flashes once every 5 seconds	flashes once every 5 seconds		
9)	**Abnormal Voltage on 14 V line of LCD Main C.B.A.**	IC2301(pin47) detects +14V line voltage on LCD Main C.B.A., then indicates the error when the voltage becomes less than +11V.	-	flashes twice every 5 seconds	flashes twice every 5 seconds		
10)	**Abnormal Voltage on 7 V line of LCD Main C.B.A.**	IC2301(pin45) detects +7V line voltage on LCD Main C.B.A., then indicates the error when the voltage becomes less than +5.7V.	-	flashes 3 times every 5 seconds	flashes 3 times every 5 seconds		
11)	**Abnormal Voltage on 3.3 V line of LCD Main C.B.A.**	IC2301(pin44) detects +3.3V line voltage on LCD Main C.B.A., then indicates the error when the voltage becomes less than +2.5V.	-	flashes 4 times every 5 seconds	flashes 4 times every 5 seconds		
12)	**Temperature Sensor short or open**	IC6001(pin86 and 87) detects open or short of the Temperature Sensor (R2901) on Lamp Thermistor C.B.A., then indicates the error when Temperature Sensor is open or shorted. (The error is not detected for 4 minutes after Lamp ON.)	-	flashes 3 times every 5 seconds	-		○
13)	**Abnormal Temperature**	IC2301(pin74 and 75) detects the temperature attached near the Lamp by the Temperature Sensor (R2901) on Lamp Thermistor C.B.A., then indicates the error when the temperature becomes more than 60℃. (The error is not detected for 4 minutes after Lamp ON.)	-	flashes 4 times every 5 seconds	-		○
14)	**Duct Fan stop**	IC6001(pin85) detects the Duct FAN stop, then indicates the error when the Duct FAN is stopped.	flashes orange 3 times every 5 seconds	-	-		○
15)	**Clogged air filter more than 90%**	IC2301(pin82) detects the clogged air filter, then indicates the error when the air filter is clogged 90%.	-	flashes 5times every 5 seconds	-	○	○
16)	**The failure of Lamp light up**	IC2301 (pin11) detects the failure of light up processing of the Lamp, then the POWER LED is changed as follows. 1) POWER LED flashes green for 140 seconds (while turning on). 2) POWER LED flashes red for 60 seconds (while cooling). 3) POWER LED lights up red (standby). **Note:** If the Lamp will not light after attempting turning on the power 2 or 3 times, the Lamp, the LCD Power C.B.A. or the LCD Main C.B.A. may be defective.	flashes green for 140 seconds. ⇩ flashing red for 60 seconds. ⇩ light up red.				
17)	**Request for Lamp Replacement**	When accumulated operation time of the the Lamp reaches 5000 hours, OSD (replacing the Lamp) appears on the screen. **Note:** The Lamp time is stored in EEPROM (IC2305).	-	-	lights up	○	
18)	**Request for Filter Cleaning**	When accumulated operation time of the Air Filter reaches 400 hours, OSD (cleaning the Air Filter) appears on the screen. **Note:** The Filter time is stored in EEPROM (IC2305).	-	-	-	○	
—	**Forced cooling**	During forced cooling, this indication is indicated.	flashes red for 10 minutes	-	flashes 5 times every 5 seconds		

Note:
1. When any of the above errors has occurred, the LED will flash as shown above every 5 seconds.
2. When two or more errors have occurred at the same time, the LED will light up or flash as shown above, and then change to another every 5 seconds in turn.
3. LAMP OFF: The LED will flash right after the Lamp goes off.
4. Warning OSD appears when the Air Filter is clogged 90%, accumulated operation time of the Lamp reaches 5000 hours, or accumulated operation time of the Air Filter reaches 400 hours.
5. IC2301 is mounted on LCD Main C.B.A. which is includes in the Projection Unit.
6. IC6001 is mounted on TV Main C.B.A.

Fig. 2-2

SERVICE CAUTION

THE LAMP COVER SWITCH AND THE FRONT THERMISTOR CAUTIONS

When servicing, be sure to install the following parts. Otherwise, the unit power will not turn on.

1. Connect the cable between Connector P2911 on the Front Thermistor C.B.A. and Connector P2304 on the LCD Main C.B.A.
   Note:
   When opening the Base Front Panel Unit as shown:
   - Remove the sheet from cable on the Projection Unit to connect the cable.
   - Set the Front Cover L and the Front Cover R Unit (or similar thickness) under the Base Front Panel Unit so as not to put excessive pressure to the connectors on the TV Main C.B.A. as shown.
2. Install the Lamp Cover securely (Lamp Cover Switch is ON).

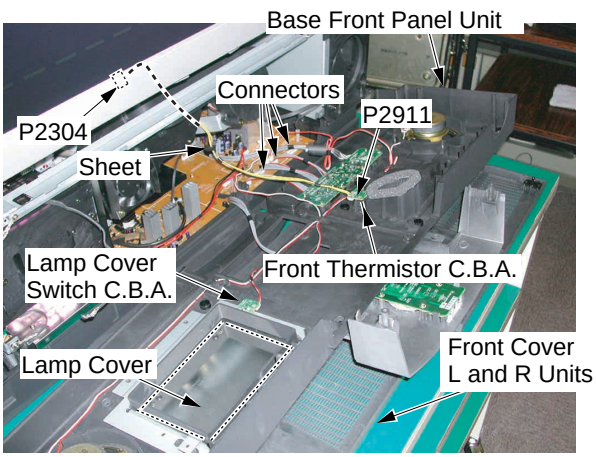


Fig. 3-1

COVERING THE FRONT FAN CAUTION

Warning:
The unit MUST NOT be operated without an Air Filter!!

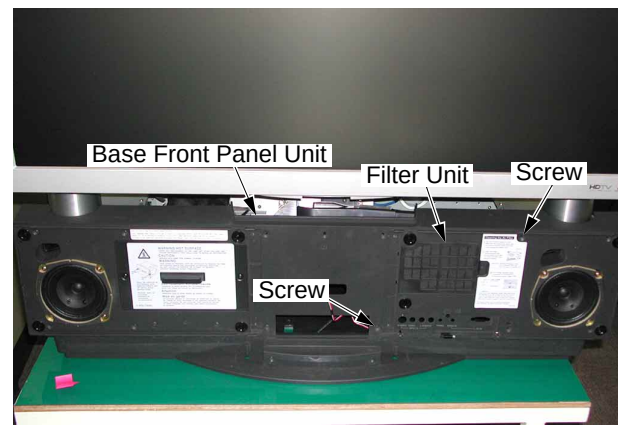
When servicing, cover the Front Fan with the Filter as follows. Otherwise, the Projection unit will be damaged by dust, etc.

Method-1 (Install the Base Front Panel Unit with the Filter Unit securely)

When servicing, install the Base Front Panel Unit (with the Filter Unit), and tighten at least 2 Screws on the Base Front Panel Unit as shown below so that the Front Fan (Intake fan) is covered securely with the Filter.

Method-2 (Use Filter tool)

Install the Filter tool (LSYF0532) on the Front Fan. Refer to "HOW TO INSTALL THE FILTER TOOL."



<Front View>

Fig. 3-2

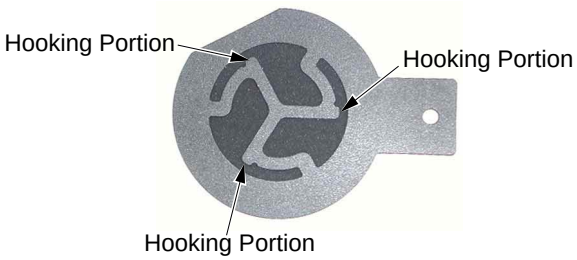
DO NOT UNPLUG AC CORD DURING COOLING OPERATION

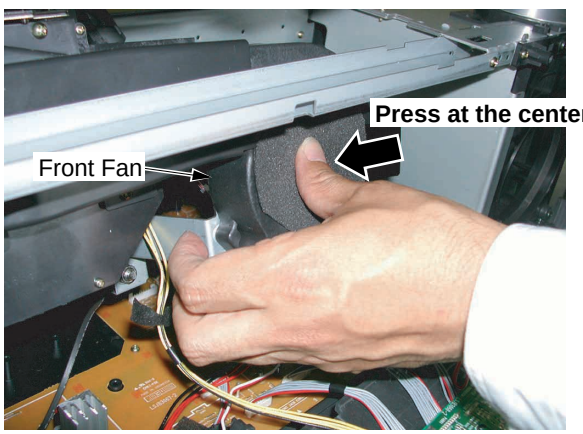
The lamp cooling fan will continue to operate for approximately 1 minute after the power is turned off.
At the same time, the POWER LED will flash red.
Do not disconnect the AC Cord from the power outlet and do not open any circuit breakers while the cooling fan is still operating.

HOW TO INSTALL THE FILTER TOOL

1. Put the Filter tool on the Front Fan as shown.
2. Press at the center of the Filter tool and release.
   (Click sound can be heard when the inside portions of the Filter tool hook to the inside edge of the Front Fan.)

Filter tool (LSYF0532)





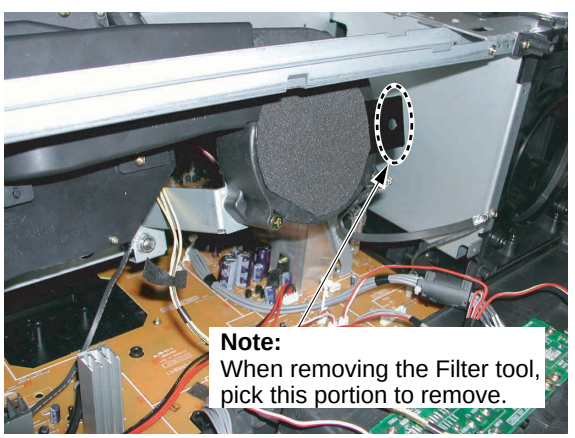


Fig. 3-3

BEFORE REMOVING THE PROJECTION UNIT FROM THE UNIT AT THE USER'S LOCATION

CAUTION:

1. **Be sure to make a note of the LAMP RUN TIME (value A) in Service Mode (LCD Main C.B.A. (1)):**

```
SERVICE MODE RESET      1  <-*1
TOTAL TIME
 130W                5535h <-*2
 150W                   0h
LAMP RUN TIME        535h <-*3

 130W                535h <-*4 Value A (changeable)
 150W                   0h
FILTER TIME          190h <-*5 Value B (changeable)
2502:1 9002:1 2303:1
2706:1        2305:1
```

< Service Mode (LCD Main C.B.A. (1)) >

*1: The number of Lamp resets
*2: The total elapsed Lamp operation time (in hours)
*3: The current elapsed Lamp operation time (in hours)
*4: The current elapsed Lamp operation time (in hours)
*5: The total elapsed Filter use time (in hours)

LAMP TIME is stored in EEPROM on the LCD Main C.B.A. Therefore, before removing the Projection Unit at the user's location, make a note of the LAMP RUN TIME (value A) in Service Mode.
Then, after installing the new Projection Unit **(without the Lamp)** at the user's location, be sure to install the original Lamp and set the LAMP RUN TIME to the original value (value A) in Service Mode.
Otherwise, OSD and LED indication to request for Lamp replacement will be displayed at the wrong time.

Note:
In case it is impossible to make a note of the LAMP RUN TIME because of a defective LCD Main C.B.A., ask the customer their daily average use and the approximate age of the current Lamp. Then, calculate the LAMP RUN TIME as follows and make a note.

Daily average use (hours)	X	Approx. age (days)	=	**LAMP RUN TIME** (hours)

2. Be sure to make a note of the FILTER TIME (value B) in Service Mode (LCD Main C.B.A. (1)):

   FILTER TIME is stored in EEPROM on the LCD Main C.B.A. Therefore, before removing the Projection Unit at the user's location, make a note of the FILTER TIME (value B) in Service Mode.
   Then, after installing the new Projection Unit at the user's location, be sure to set the FILTER TIME to the original value (value B) in Service Mode.
   Otherwise, OSD and LED indication to request for Air Filter cleaning will be displayed at the wrong time.

3. After removing the Projection Unit, take out the Light Prevention Plate and the Lamp from the Projection Unit once and keep them. Then, be sure to install the Light Prevention Plate and the Lamp into the new Projection Unit for replacement.

Service Mode Map

How to ENTER Service Mode:
VOLUME DOWN button + TV/VIDEO key
(on the Center Panel) (on the remote)
(for more than 5 seconds in power off condition)

Power ON

```
SERVICE MODE
KEY DET      IR:1 UNIT:1
  IC3701:1 5003:1 5006:1
  IC5301:1 5502:1 7201:1
IC6001 PORT  V:1.00 B:15
 P0 100-0111 P7 01001110
 P1 0000000- P8 11000111
 P2 11100000 P9 -----011
 P4 -0-1-1-1 PA 00111000
 P5 ---01001 PB 11000000
 P6 00110001 PC ----1111
```

< Service Mode (TV Main C.B.A.) >

SWAP key (on the remote) (for more than 5 seconds)
RECALL key (on the remote)

```
SERVICE MODE

    LAMP/FILTER/IIC
    IC2301PORT/SERIAL

    VER:0202318


V9F 3F 81 01 9C 9C 20 33
P7F C3 00 9E 9E 01 00 00
```

< Service Mode (LCD Main C.B.A.) >

ACTION key (on the remote)
RECALL key (on the remote)
ACTION key (on the remote)

```
SERVICE MODE RESET    1
TOTAL TIME
 130W              5535h
 150W                 0h
LAMP RUN TIME       535h

 130W               535h <- Value A
 150W                 0h
FILTER TIME         190h <- Value B
2502:1 9002:1 2303:1
2706:1        2305:1
```

< Service Mode (LCD Main C.B.A.(1)) >

```
SERVICE MODE
IC2301 PORT
 P0 00000000 P7 10000001
 P1 --001000 P8 ----0001
 P2 00001111 P9 -1110011
 P3 00000010 P10101000000
 P4 11001111 P11---00000
 P5 11001110 P12-------0
 P6 --000000
9202:12 9204:0E 9801:E2
9508:12 9501:00 9803:BB
```

< Service Mode (LCD Main C.B.A.(2)) >

How to Exit:
Power button only

WHEN REPLACING THE PROJECTION UNIT ON THE UNIT AT THE USER'S LOCATION

CAUTION:
When removing the Projection Unit, take out the Light Prevention Plate and the Lamp from the Projection Unit once and keep them. Then, be sure to install the Light Prevension Plate and the Lamp into the new Projection Unit for replacement.

ADJUSTMENT/SETTING of the Projection Unit
Be sure to do the following:
1. Picture Position Adjustment
2. Focus Adjustment
   Note:
   Item 2 is not always necessary. Perform this adjustment if necessary.
3. Set LAMP RUN TIME to the original value
   Note:
   Item 3 is always necessary to use the original Lamp.
4. Set FILTER TIME to the original value
   Note:
   Item 4 is always necessary to use the original Air Filter.

Preparation of Adjustment
1. Install the original Light Prevention Plate and the original Lamp into the new Projection Unit. Then, install the new Projection Unit into the Unit.
2. Connect Connector P2911 on the Front Thermistor and install the Center Panel Unit and the Lamp Cover. Refer to "THE LAMP COVER SWITCH AND THE FRONT THERMISTOR CAUTIONS."
3. Set the Front Cover L and Front Cover R Unit under the Base Front Panel Unit so as not to damage the connectors on the TV Main C.B.A. as shown.
4. Install the Filter tool on the Front Fan. Refer to "COVERING THE FRONT FAN CAUTION."

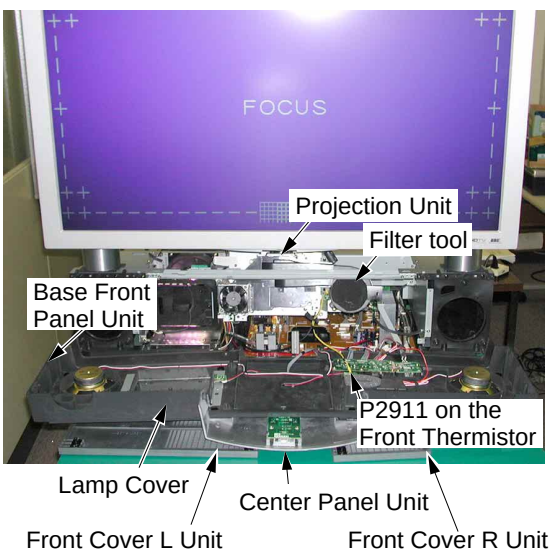
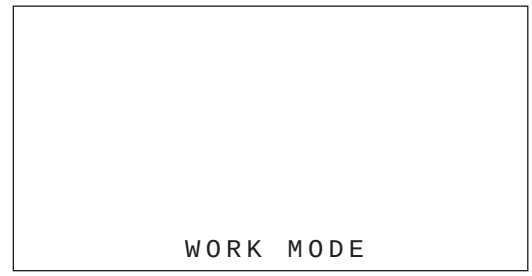


Fig. 4-1

5. Turn the power on.

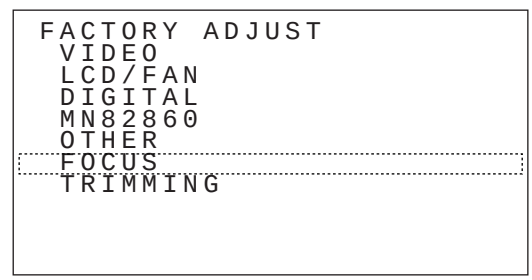
1. Picture Position Adjustment
   1) Press and hold the VOLUME DOWN button on the unit and the RECALL key on the remote for over 5 seconds in power on condition. The unit will go into the FACTORY mode. (The POWER LED, TEMP LED and LAMP LED will light up for 5 seconds and "WORK MODE" will appear on the screen.)



< FACTORY mode >

Fig. 4-2

   2) Then, press and hold the VOLUME DOWN button on the unit and the SWAP key on the remote for over 5 seconds. The unit will go into the FACTORY ADJUST mode. (FACTORY ADJUST menu will appear.)



<FACTORY ADJUST mode>

Fig. 4-3

   3) Press CH UP/DOWN key on the remote to select "FOCUS" on menu and press the ACTION key. (The FOCUS screen will appear.)

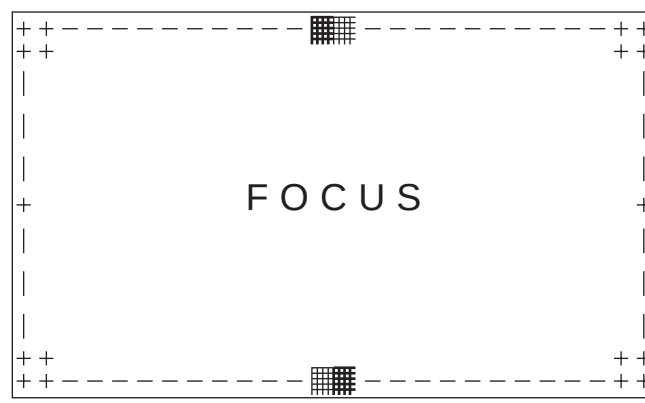


Fig. 4-4

4) Loosen Screws “a” and “b.”

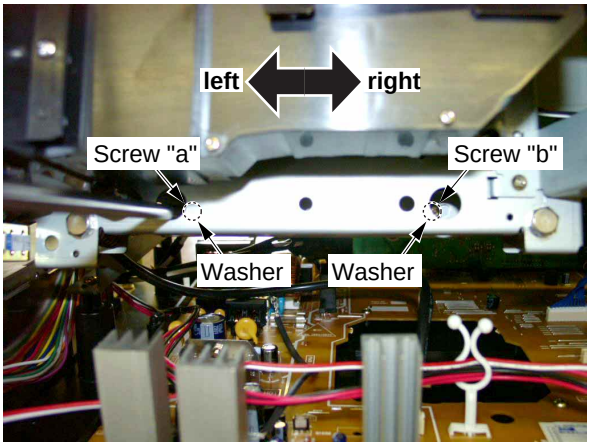


Fig. 4-5

5) Adjust the Projection Unit to the left or the right so that both width on the left (“A”) and on the right (“B”) become same. Then, the top and bottom marks are centered as shown.

Note:

If the Projection Unit is moved left, the Focus Screen moves right.

If the Projection Unit is moved right, the Focus Screen moves left.

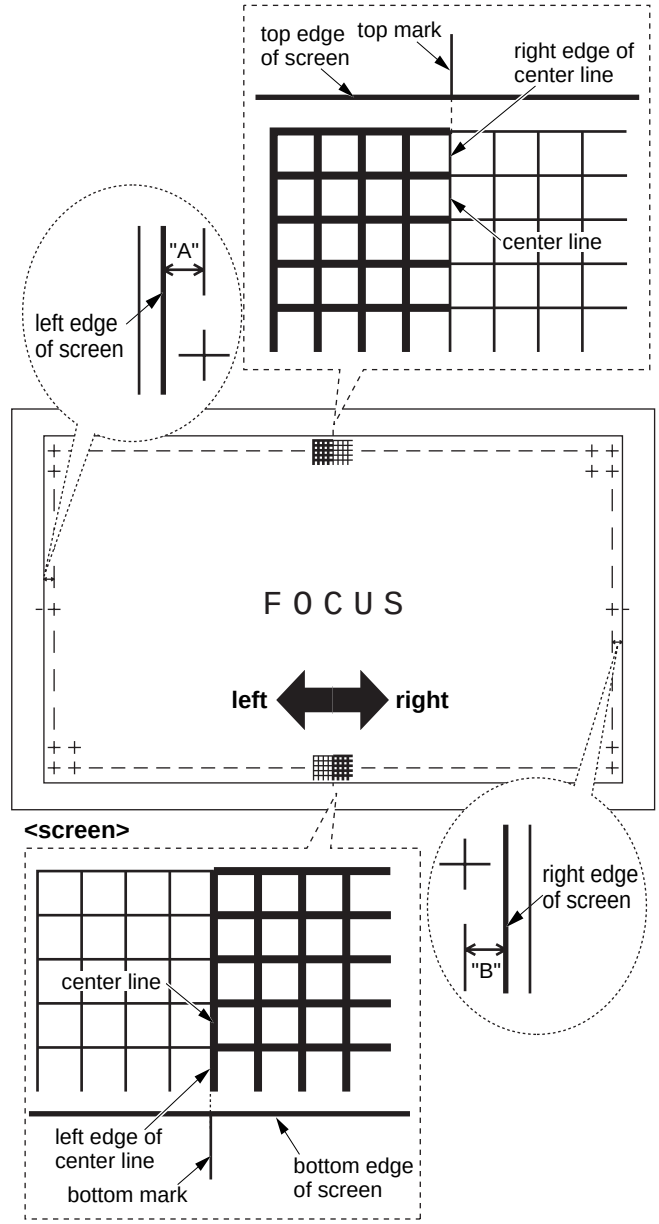


Fig. 4-6

6) Tighten screws “a” and “b” to fix the Projection Unit after adjustment.

(Tilt Adjustment)
Note:
There are 4 hex nuts “c1” “d1” “c2” “d2” on the Projection Unit.

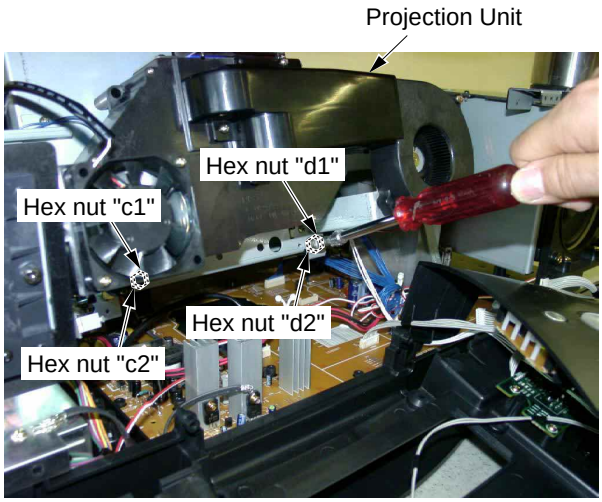
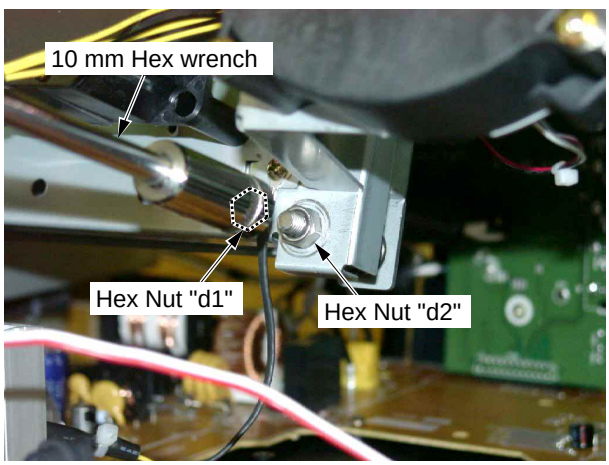


Fig. 4-7-1

7) Remove the hex nuts “c1” and “d1” using a 10 mm hex wrench.



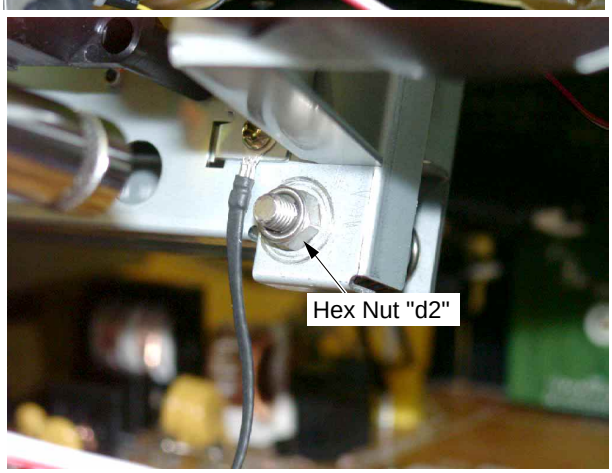


Fig. 4-7-2

8) Adjust the Projection Unit by turning the hex nuts “c2” and “d2” using a 10 mm hex. wrench so that both width in the top (“C”) and in the bottom (“D”) become same. Then, the right and left marks are almost centered as shown.
Note:
If the hex nut “c2” are turned clockwise, the Right Focus Screen moves up.
If the hex nut “d2” are turned clockwise, the Left Focus Screen moves up.

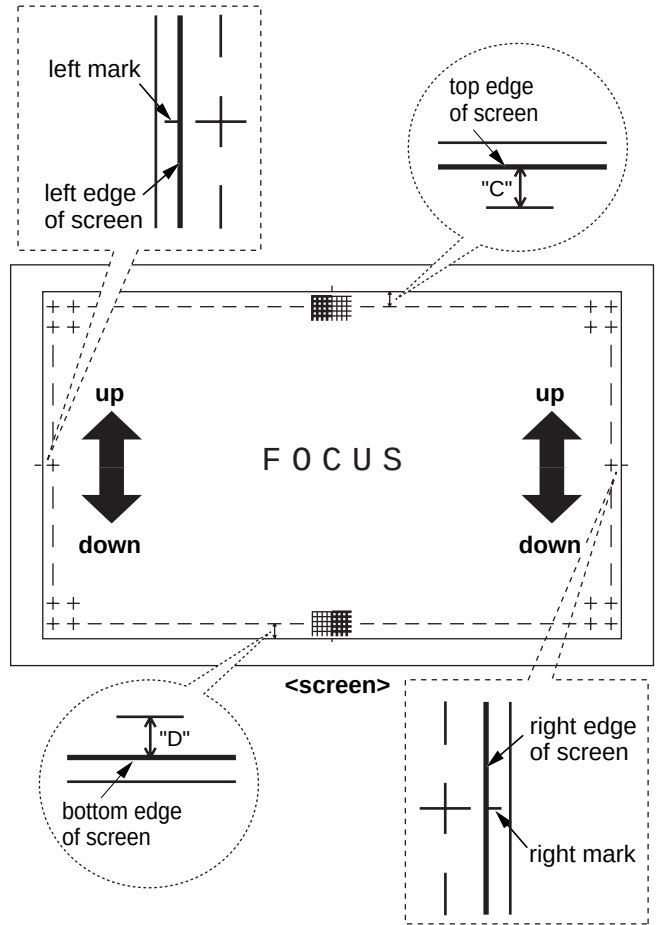


Fig. 4-7-3

8) After adjusting, install the hex nuts “c1” and “d1.” Then, tighten the hex nuts “c1” and “d1 while fixing the hex nuts “c2” and “d2” by using a wrench.

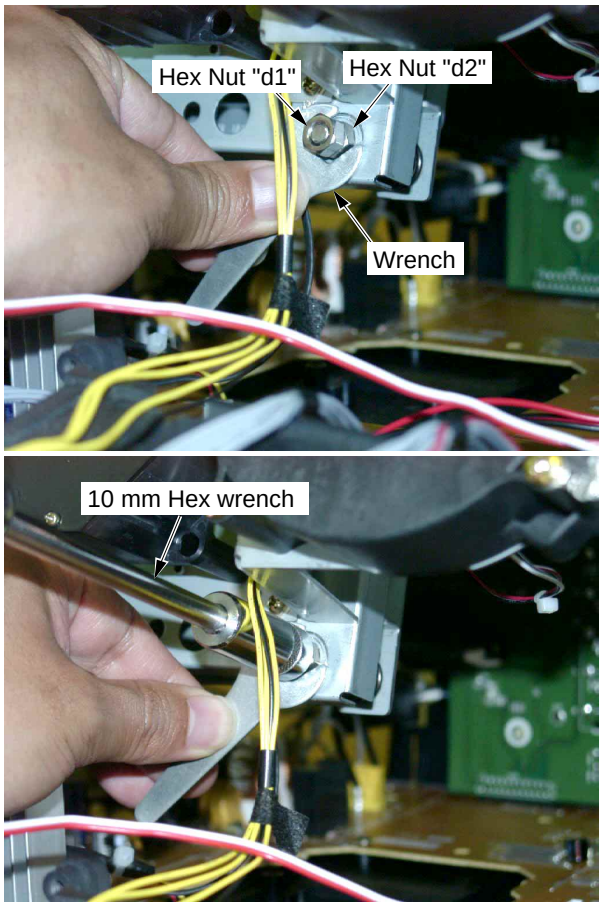


Fig. 4-7-4

9) Confirm that the Right and Left marks are centered.

2. Focus Adjustment
   1) Loosen the 2 Screws on the Projection Lens until the Projection Lens can be moved.
   2) Adjust the Projection Lens by rotating the Projection Lens so that each pixels in the seven portions are clearly visible to obtain the best focus.

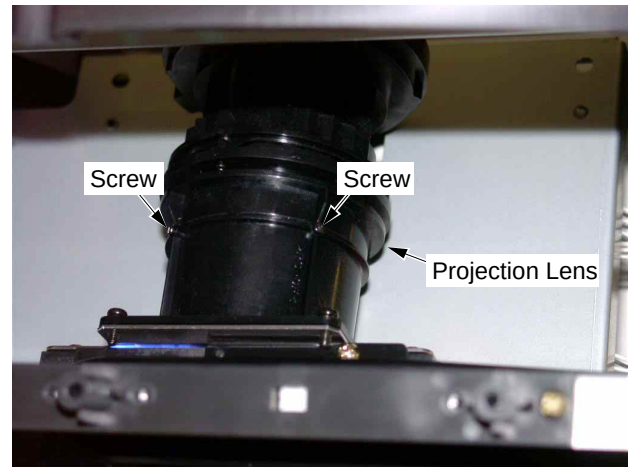
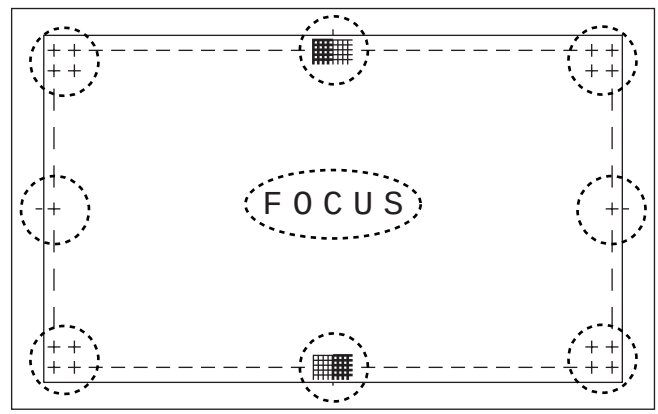


Fig. 4-8-1

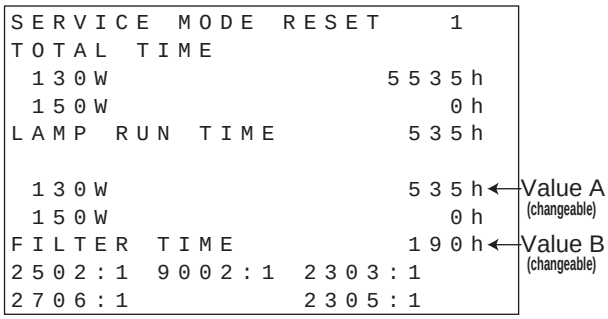


<screen>

Fig. 4-8-2

3) After adjusting, tighten the 2 Screws on the Projection Lens.

3. **Set LAMP RUN TIME to the original value**
   1) Select LAMP RUN TIME in Service Mode (LCD Main C.B.A. (1)).
   2) Press the VOLUME UP/DOWN key on the remote to change to the original value (value A) that was noted before removing the Projection Unit at the user's location.



< Service Mode (LCD Main C.B.A. (1)) >

Fig. 4-9

4. **Set FILTER TIME to the original value**
   1) Select FILTER TIME in Service Mode (LCD Main C.B.A. (1)).
   2) Press the VOLUME UP/DOWN key on the remote to change to the original value (value B) that was noted before removing the Projection Unit at the user's location.
      Note:
      If the Air Filter is cleaned, reset the FILTER TIME (change to "0" (value B)).

REPLACEMENT OF LAMP

Lamp Time Reset Procedure:

Be sure to reset the Lamp time to "0" after replacing the Lamp.

1. Plug in the AC Cord, and turn on the power by pressing the POWER button.
2. Press and hold the VOLUME DOWN button on the unit and the PIP key on the remote together for over 5 seconds in power on condition.
   When the reset is finished, the display as shown in Fig. 5-1 appears and the LAMP LED goes out.

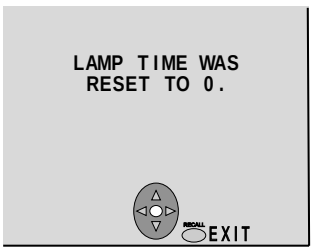


Fig. 5-1

Note:

1. If the Lamp time exceeds 5000 hours, when turning on the power (Lamp ON), the display as shown in Fig.5-2 appears for about 5 minutes and LAMP LED flashes.

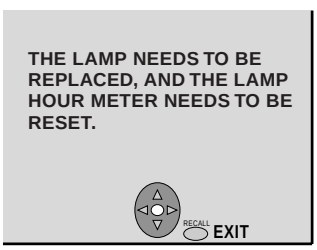


Fig. 5-2

2. Due to variation in the way each lamp is used, the lamp may need to be replaced before the maximum 5000 hour limit is reached. These variations include the number of times and the duration the lamp is lit, prolonged use in excess of 24 hours, and any mechanical shock the bulb may accidentally experience. In situations where the use of this product is critical we recommend keeping a spare bulb on hand.

WARNING:

The high-pressure lamp may explode if not properly handled. The lamp is hot immediately after use. Touching it directly may cause burns. Please allow the lamp to cool before handling or replacing the lamp unit.

Avoid touching the glass portion of the bulb with your fingers. Natural oils from your skin can cause a "hot spot" to develop, which can cause the bulb to crack when it gets hot. In case the bulb is accidentally touched, the area should be carefully cleaned using isopropyl alcohol and a soft lint free cloth or cotton ball.

Cautions for Lamp Unit Replacement:

- Handle the removed old lamp unit carefully. If handled improperly, it may explode.
- Wear gloves when replacing the lamp unit.
- If replacing the lamp unit becomes necessary during the operation of the TV, follow the procedure below to turn off the power and wait until the lamp unit cools completely.

Lamp Replacement Procedure:

1. Press the POWER button on the remote to turn off the power.
2. Wait for about 1 minute until the cooling fan stops.
   Note:
   The lamp cooling fan will continue to operate for about 1 minute after the power is turned off. Do not unplug the AC Cord from the outlet until the fan has stopped. Avoid interrupting the power by using circuit breakers or switchable power strips.
3. After the cooling fan has stopped, unplug the AC Cord from the outlet.
   Note:
   Please wait more than one hour before replacing the lamp.

   [Forced cooling function]
   If you need to replace the lamp more urgently:
   - **The Projection display has a forced cooling feature. After the POWER button is turned OFF, and sometime during about the first minute of the normal cooling fan operation, press the VOLUME UP button on the unit and CH UP key on the remote at the same time for more than 5 seconds. The cooling fan will operate for about 10 minutes.**
4. Remove the Front Cover L Unit from the latches.
5. Remove the Lamp Cover by loosening the 2 Screws.

Fig. 5-3

6. Loosen the 2 Screws on the Lamp. Then, pull the Lamp.
   Note:
   Because the Lamp may still be hot, use caution when handling.

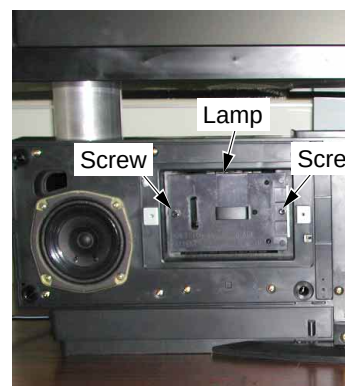


Fig. 5-4

7. Install the new Lamp, and tighten the 2 Screws.
8. Install the Lamp Cover securely, and tighten the 2 Screws.
9. Install the Front Cover L Unit.

Note:

After replacing the Lamp, use caution to reset the Lamp time.

REPLACEMENT OF FILTER UNIT

Filter Time Reset Procedure:

Be sure to reset Filter time to “0” after replacing the Filter.

1. Clean the Filter Unit.
2. Select FILTER TIME in Service Mode.
3. Press the VOLUME UP/DOWN key on the remote to reset (change to “0”).

Note:

1. The Filter should be cleaned about every 400 hours.
2. If Air Filter operation time exceeds 400 hours, the display as shown in Fig. 6-1 appears for 5 minutes.

Fig. 6-1

The display as shown in Fig. 6-2 appears when turning on the power again after cleaning the Filter Unit in power off condition.
Filter time is reset by selecting “YES” as shown below.

Fig. 6-2

Clogged Air Filter Detection

When a dirty or clogged air filter is detected, the OSD is displayed for 1 minute. And then the Lamp is turned OFF.

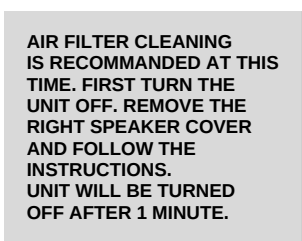


Fig. 6-3

Note:
At this time, only the POWER button is operational. When the Power is turned off with the POWER button, the usual confirming message does not appear.

Filter Replacement Procedure:

Replace the Filter Unit when it remains clogged, dirty or damage even after cleaning.

1. Remove the Front Cover R Unit from the latches.
   Remove the Filter Unit by releasing indented portion of the Filter Unit.

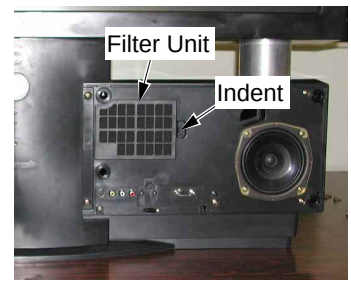


Fig. 6-4

Warning:
Do not operate this unit without having the air filter installed. Dirt or dust particles will be sucked into the LCD display and costly damage and / or picture deterioration may occur.

2. Install the new Filter Unit.

CLEANING METHOD

THE SCREEN UNIT AND THE MIRROR

•THE SCREEN UNIT (Lenticular Screen, Fresnel Lens)

The Lenticular Screen surface should be wiped gently with a clean, soft, dry cloth. If the dirt cannot be removed by wiping with a dry cloth, lens cleaner can be used. Wipe evenly so as not to leave any streaks.

Note:

Do not use cleaning materials containing methyl alcohol, acetone, or dichloromethane.

Wipe the surface of the Fresnel Lens with a clean, soft, dry cloth.

•THE MIRROR

Remove any dirt with a compressed air blower or wipe with a clean, soft, dry cloth. If wiped too forcefully, the surface of the Mirror can be damaged. If wiping with a clean, dry cloth does not remove the dirt, the Mirror must be replaced.

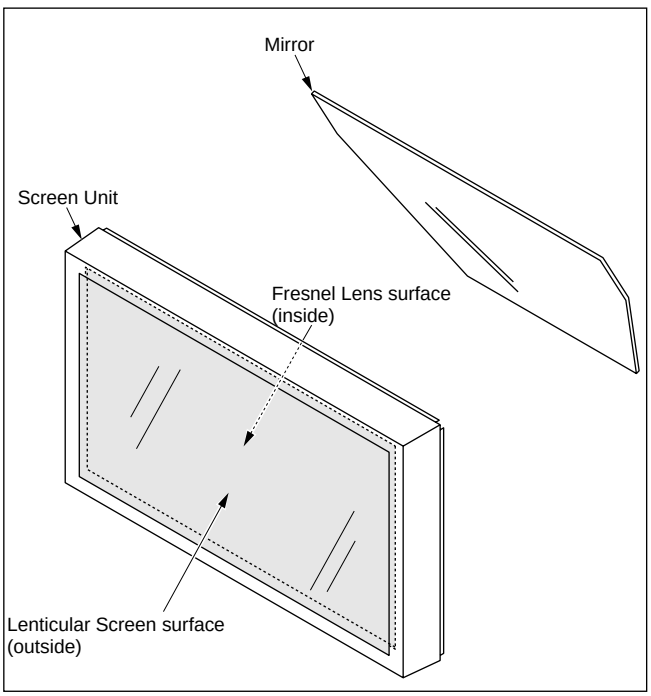


Fig. 7-1

THE LAMP

Gently wipe the surface of the glass of the Lamp with cleaning paper or soft cloth.

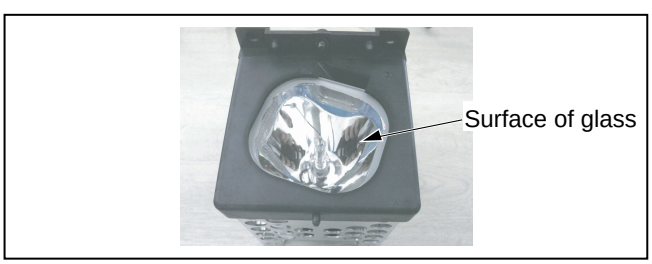


Fig. 7-2

THE FILTER

Note:

The Filter should be cleaned about every 400 hours.

CAUTION:

Operating with torn or damaged Filter may cause damage to the Projection unit.

Clean the Filter. Gently remove any accumulated dust from Filter with a vacuum cleaner.

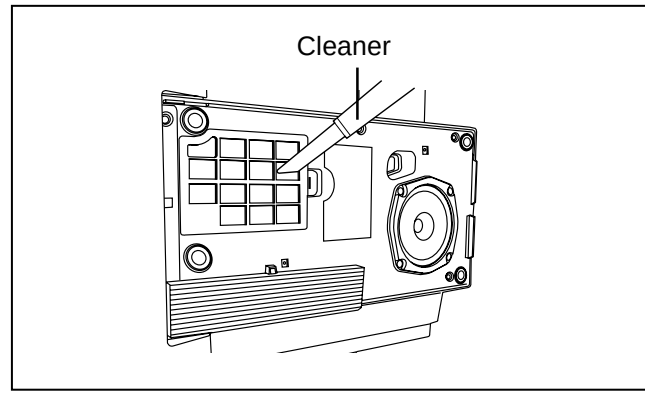


Fig. 7-3

THE PROJECTION LENS

Use lens cleaning paper and cleaner available at your local camera shop, etc. Dampen the cleaning paper with cleaner and gently wipe the surface of the lens from the center outward to remove dust.

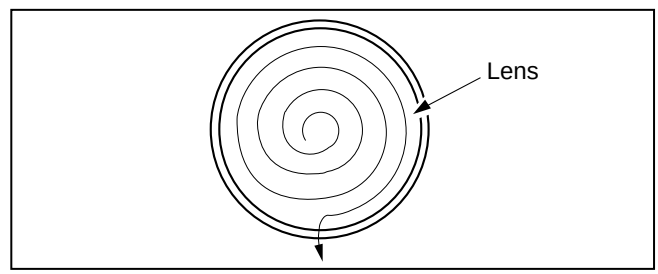


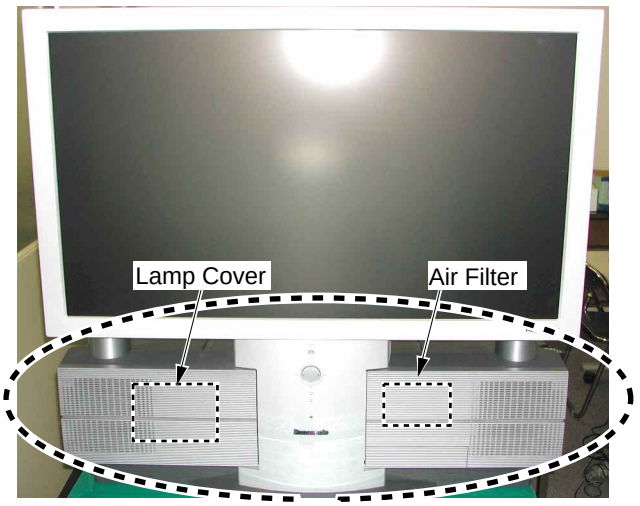
Fig. 7-4

THE POLARIZER UNIT, THE FIELD LENS, THE RELAY LENS, THE CONDENSER LENS, THE DICHROIC MIRROR, THE FULL MIRRORS, THE INTEGRATOR AND THE P/S CONVERTER

Make sure that no dust gets on the optical components such as the Polarizer Unit, the Field Lens, the Relay Lens, the Condenser Lens, the Dichroic Mirror, the Full Mirrors, the Integrator and the P/S Converter. Clean these optical components with cleaning paper moistened with lens cleaner if necessary.

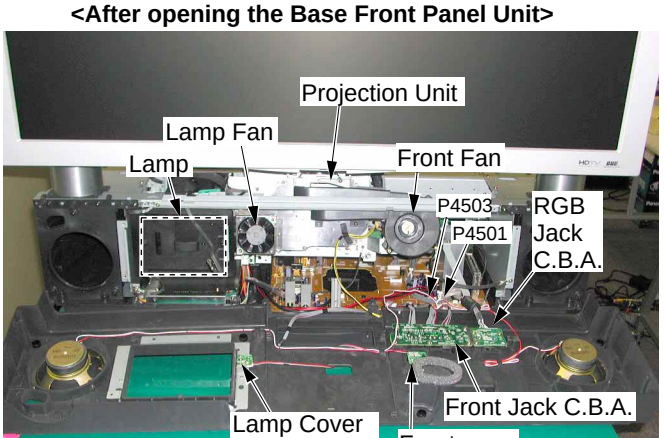
MAIN PARTS LOCATION

<Front View>



<Rear View>

<After opening the Base Front Panel Unit>



<After removing the Rear Cover>

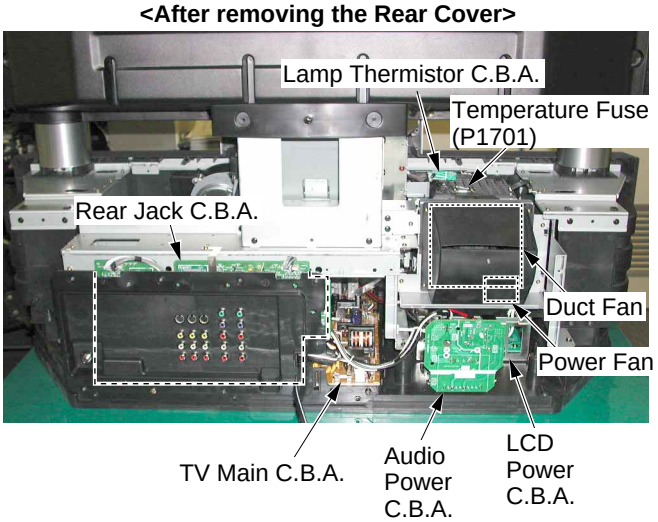
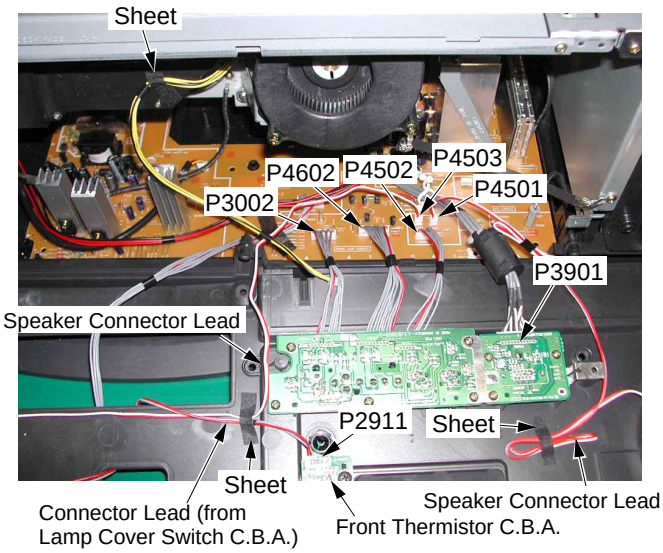


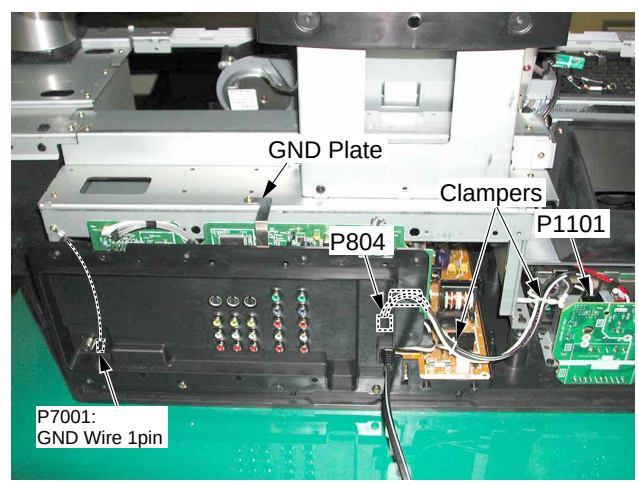
Fig. 8

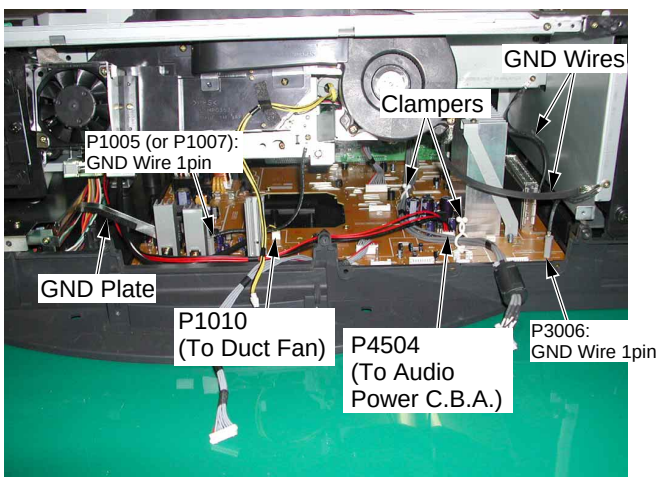
WIRE AND LEAD POSITION DIAGRAM

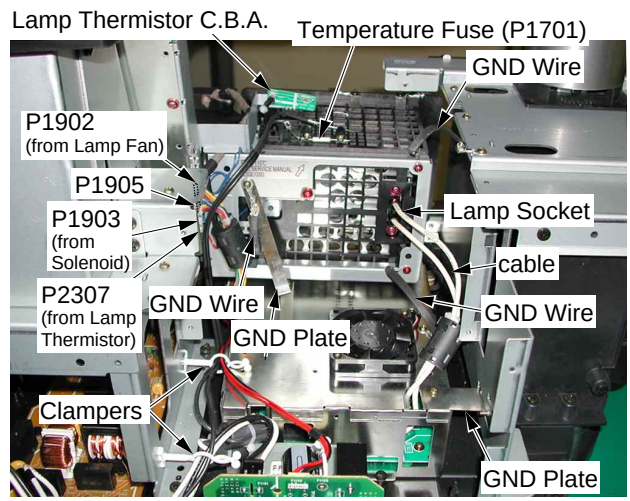
After servicing, make sure that all wires, leads, and clampers are placed in their original position. It is important for the best operation of the unit.

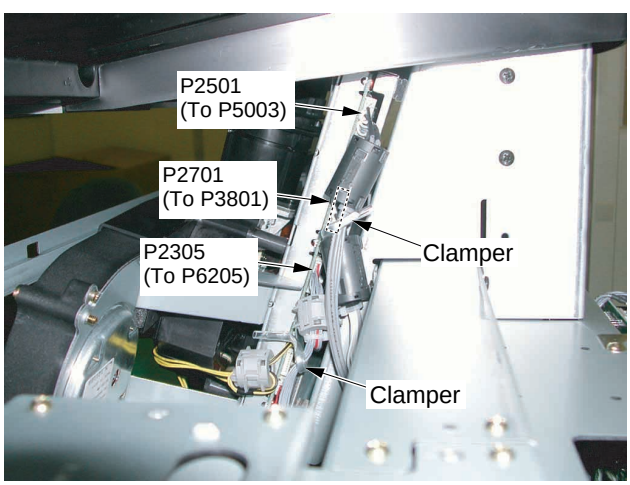
Note:
Use extreme care especially for the following.











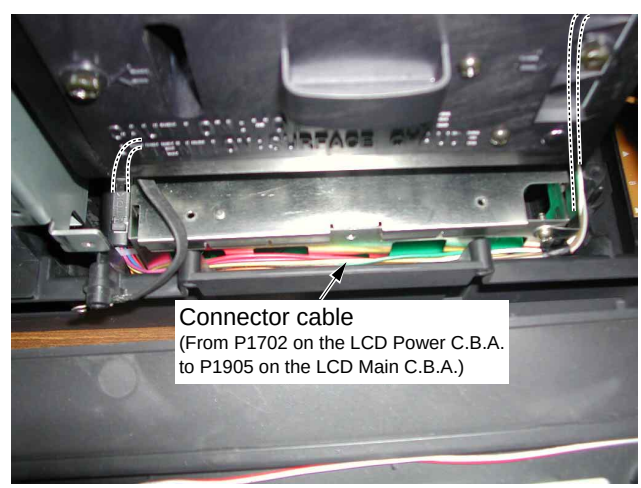


Fig. 9

HOW TO CHECK THE REAR JACK C.B.A.

1. Remove the Rear Cover. Refer to Step 1 in HOW TO REMOVE THE TV MAIN C.B.A. AND THE REAR JACK C.B.A.
   Note:
   In this position, it is possible to check the TPs (TP3801, TP3802, TP3803, TP5003, TP5004, TP5005) and Connectors (P3801, P5003) on the upper portion of the Rear Jack Panel.

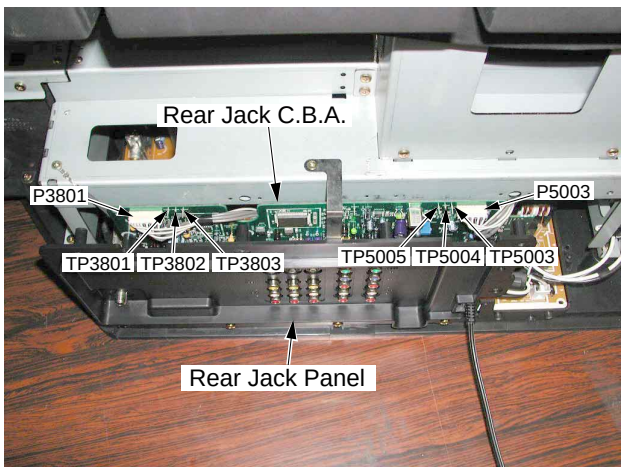


Fig. 10-1

2. Remove the Rear Jack Panel from the Rear Jack C.B.A. To do this, remove the AV Front Door, the Front Cover L Unit, the Front Cover R Unit, the Center Panel Unit, the Lamp Cover and the Base Front Panel Unit in order. Refer to steps 2~12 in HOW TO REMOVE THE TV MAIN C.B.A. AND THE REAR JACK C.B.A.
3. Install the TV Frame into the unit.

Slide to install

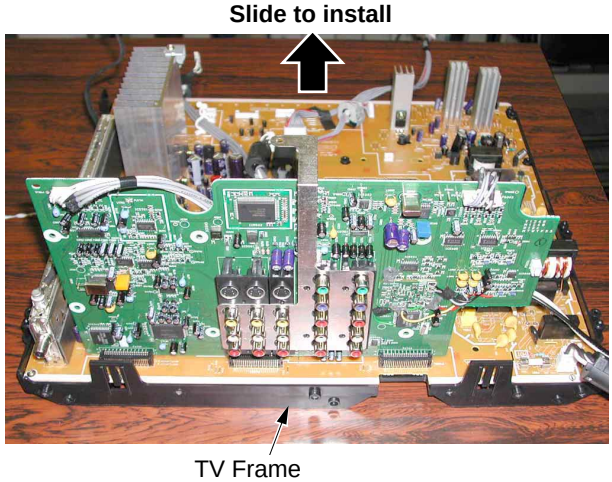


Fig. 10-2

4. Reconnect Connector cables to Connectors P1007, P1010 and P4504 on the TV Main C.B.A.
5. Reconnect Connector cables to Connectors P2501, P2701, P2305 on the LCD Main C.B.A.
6. Reconnect Connector cables to Connector P804 on the TV Main C.B.A.
   Reconnect Connector cables to Connector P1101 on the Audio Power C.B.A.

<Checking position for the Rear Jack C.B.A.>

Fig. 10-3

HOW TO CHECK THE TV MAIN C.B.A. AND THE REAR JACK C.B.A.

1. Remove the Rear Cover, the AV Front Door, the Front Cover L Unit, the Front Cover R Unit, the Center Panel Unit, the Lamp Cover, the Base Front Panel Unit, the Rear Jack C.B.A. and the TV Main C.B.A. from the unit. Refer to Steps 1~14 in “HOW TO REMOVE THE TV MAIN C.B.A. AND THE REAR JACK C.B.A.”
2. Set the TV Frame as shown in Fig. 11-3.
3. Install the Rear Jack C.B.A. into the TV Main C.B.A. by connecting Connectors P4601, P4603 and P4604.
4. Install the RGB Jack C.B.A. into the Rear Jack C.B.A. by connecting Connectors P3901.
5. Install the Front Jack C.B.A. into the TV Main C.B.A. by connecting Connector P3002, P4602, P4502.
6. Install the Operation C.B.A. into the TV Main C.B.A. by connecting P6204 Connector cable to Connector P6303.
7. Set the TV Main C.B.A. and the Rear Jack C.B.A. on the TV Frame.
8. Reconnect Connector cables to Connector P1010 (Duct Fan), P4504 (Audio Power C.B.A.) on the TV Main C.B.A.
9. Reconnect Connector cables to Connectors P2501, P2701 and P2305 on the LCD Main C.B.A.
   Note:
   When connecting Connector P2305 on the LCD Main C.B.A. and Connector P6205 on the TV Main C.B.A., use the **Extension Cable (LSUA0035)**. The original P2305 Connector Cable is not used in this position.
10. Reconnect Connector cable from the LCD Power C.B.A. to Connector P804 on the TV Main C.B.A.
    Note:
    Before connecting Connector P804, remove the Ferrite Core from Connector Cable by releasing the 2 Locking Tabs.

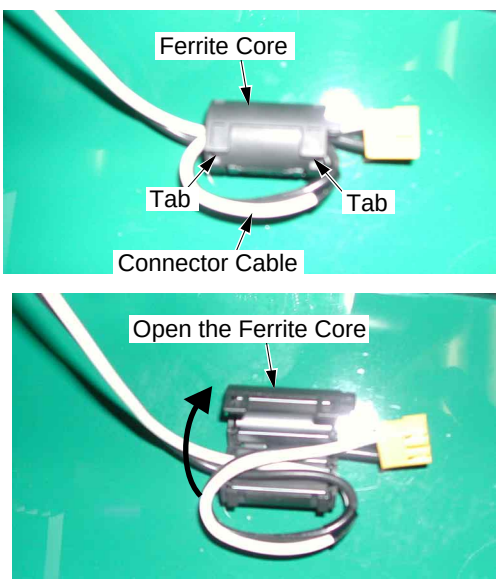


Fig 11-1

11. Reconnect Connector cable to Connector P1101 on the Audio Power C.B.A.
12. Install the Right Speaker Connector Leads into the TV Main C.B.A. by connecting Connector P4501.
    Note:
    Before connecting the Right Speaker Connector Leads, remove the Right Speaker Leads from the inside of the Base Front Panel Unit by removing the sheets.

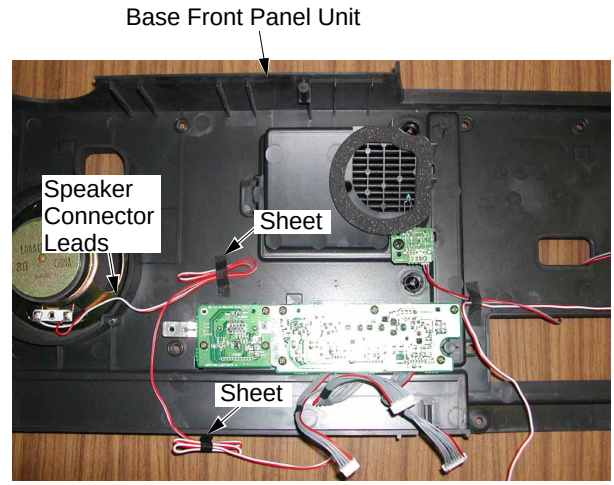


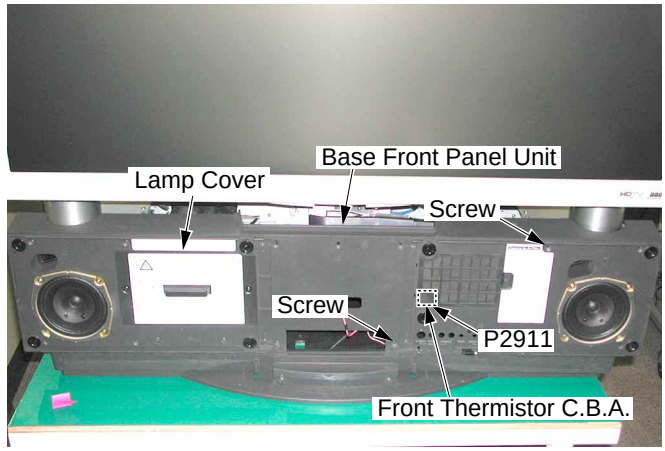
Fig. 11-2

13. Reconnect Connector cable to Connector P2911 on the Front Thermistor C.B.A.
14. Install the Base Front Panel Unit by tightening at least 2 Screws as shown in Fig. 11-3, or install the Filter tool.
15. Install the Lamp Cover into the Base Front Panel Unit by tightening at least 2 Screws as shown in Fig. 11-3.

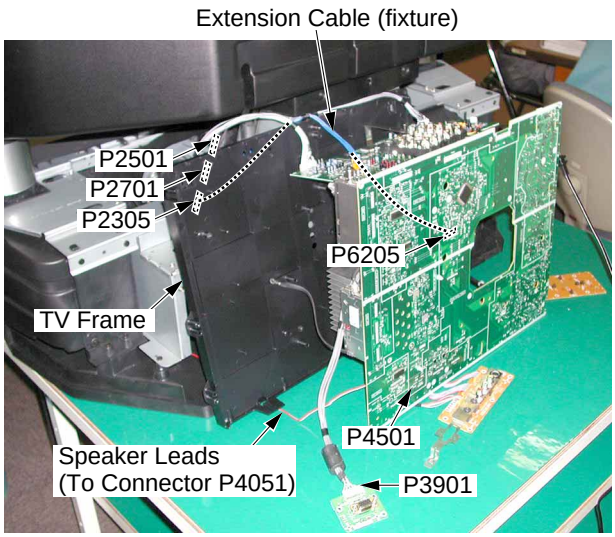
Note:

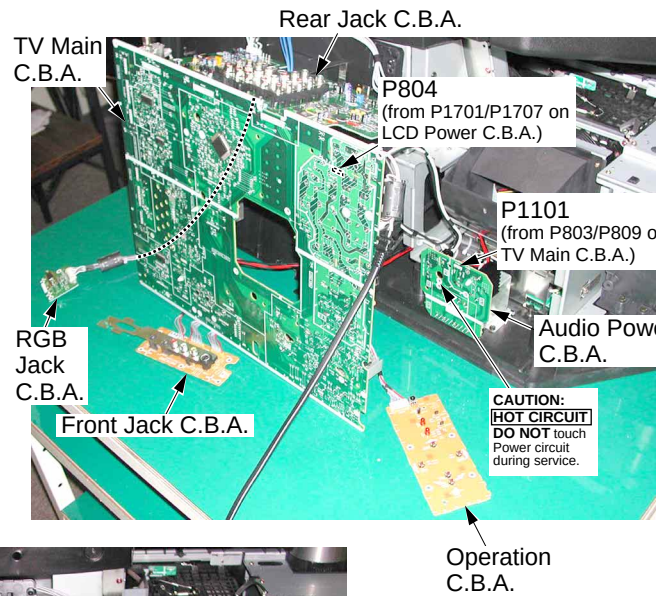
1. Take extreme caution when handling the Rear Jack Panel to avoid damage to Connectors P4601, P4603 and P4604 on the TV Main C.B.A.
2. Be sure to install the Base Front Panel Unit (with the Filter Unit), and tighten at least 2 Screws of the Base Front Panel Unit so that the Front Fan (Intake fan) is covered securely with the Filter.
   Alternatively, be sure to install the Filter tool on the Front Fan.

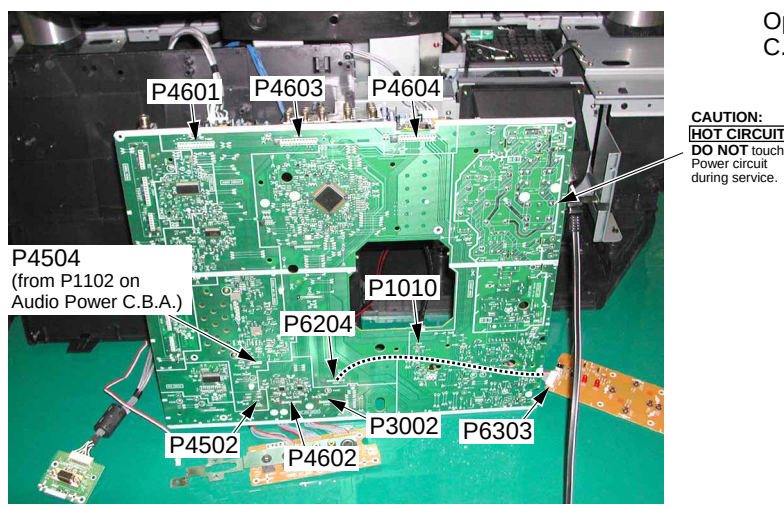
<Checking position for the TV Main C.B.A. and the Rear Jack C.B.A.>



<Front View>







<Rear View>

Fig. 11-3

HOT CIRCUIT

Primary circuit exists on the TV Main C.B.A., the LCD Power C.B.A. and the Audio Power C.B.A.
This circuit is identified as "**HOT**" on the C.B.A. and in the Service Manual. Use extreme care to prevent accidental shock when servicing.

MODEL NO. IDENTIFICATION MARK

Use Marks shown in the chart below to distinguish the different models included in this Service Manual.

MODEL	MARK
PT-40LC12	A
PT-45LC12	B
Not Used	PT

Note:
Refer to Item 3 of Schematic Diagram Notes of Schematic Diagram and Circuit Board Layout Notes, for mark "PT."

LARGE VIEW FOR WIRE AND LEAD POSITION DIAGRAM

Here are the figures for the detailed reference.

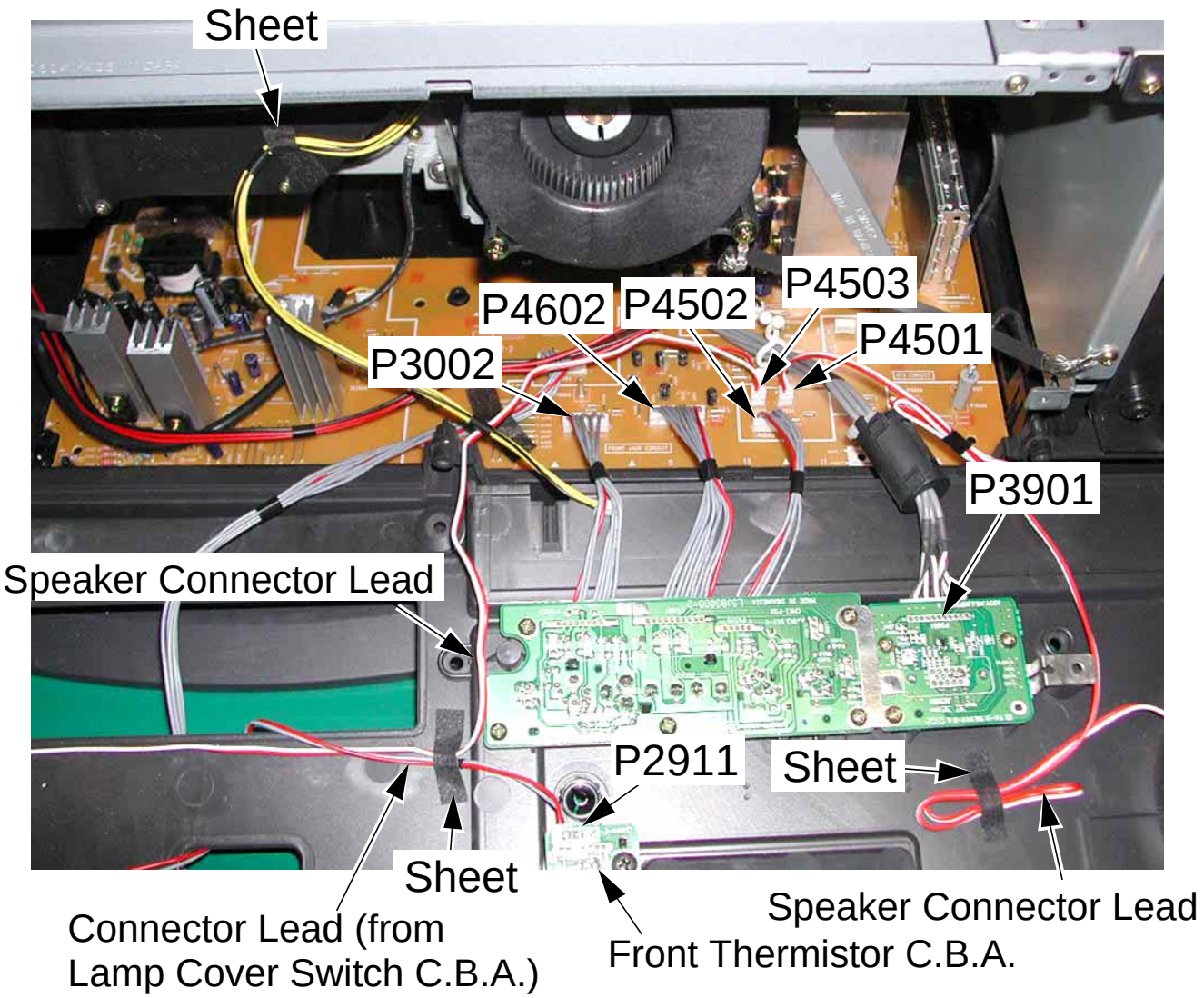


Fig. 9

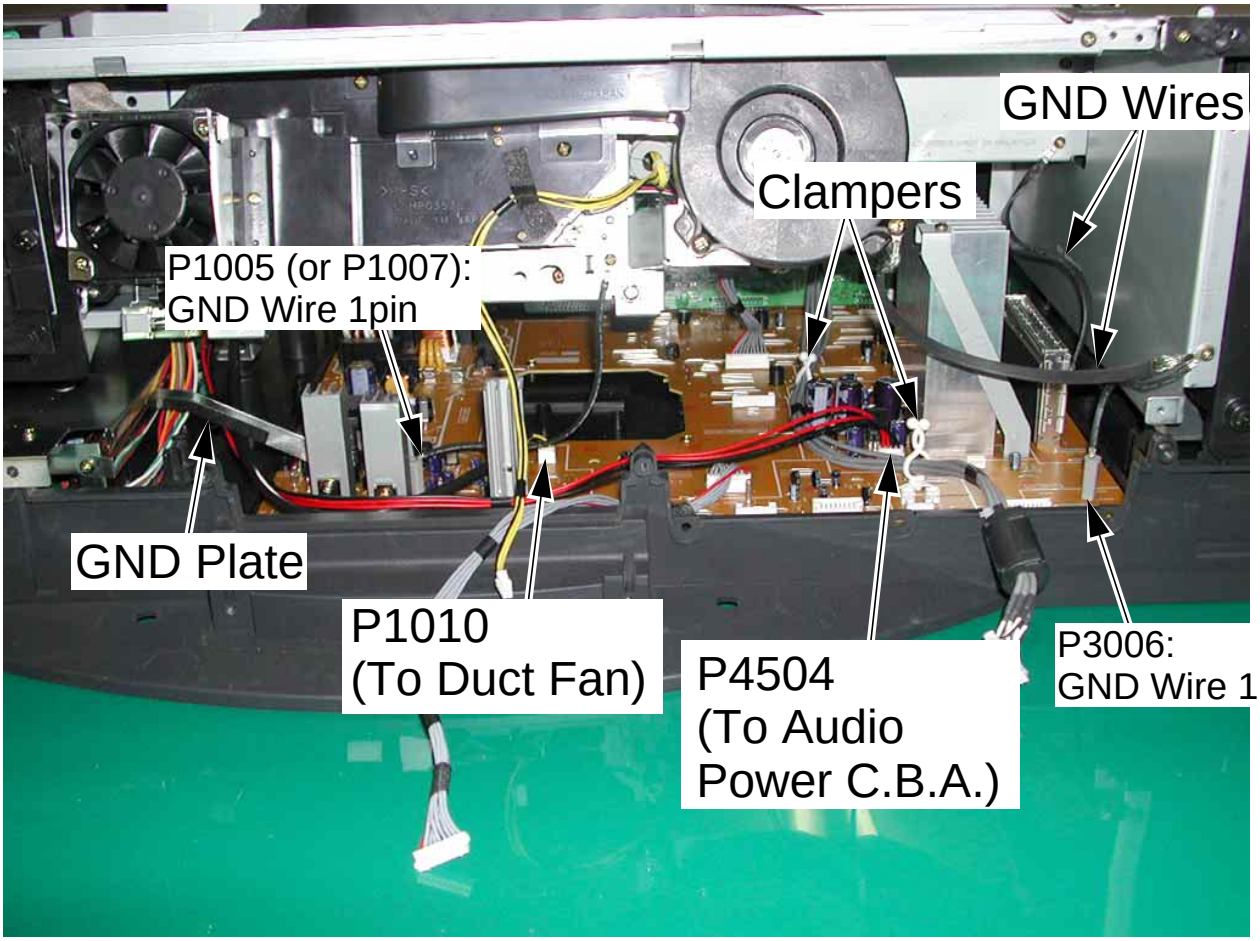

GND Wires
Clampers
P1005 (or P1007):
GND Wire 1pin
GND Plate
P1010
(To Duct Fan)
P4504
(To Audio
Power C.B.A.)
P3006:
GND Wire 1pin

Fig. 9

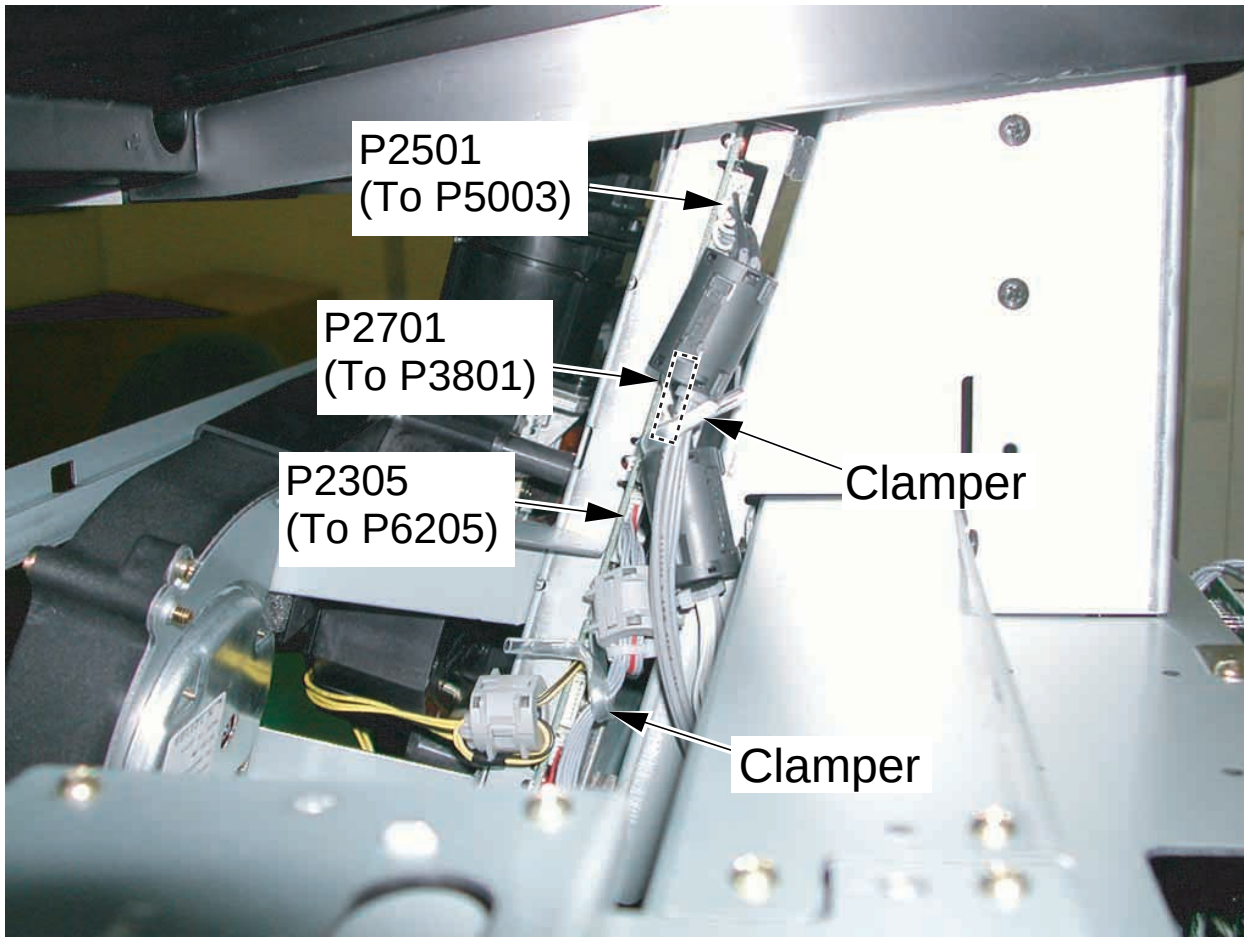

P2501
(To P5003)
P2701
(To P3801)
P2305
(To P6205)
Clamper
Clamper

Fig. 9

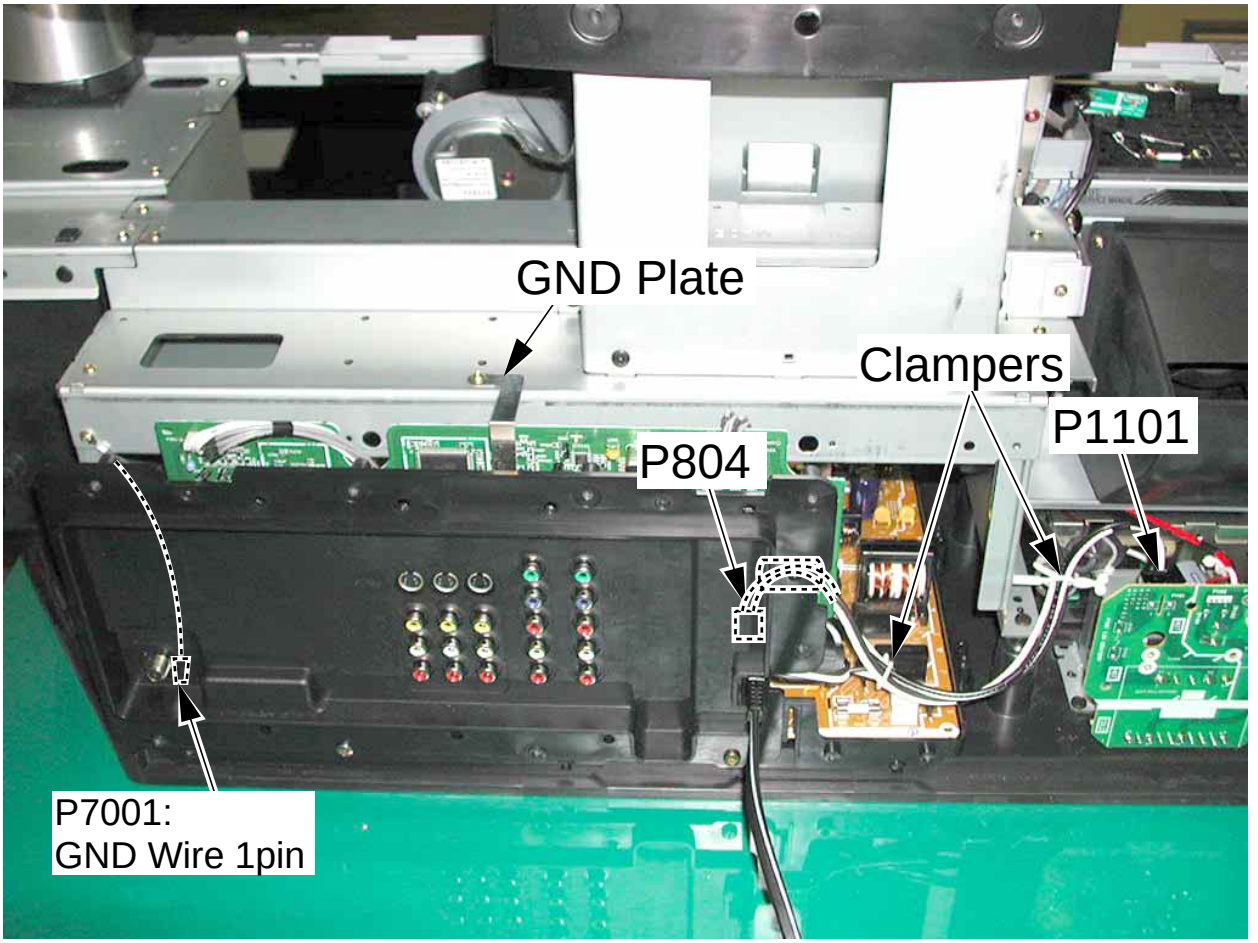


Fig. 9

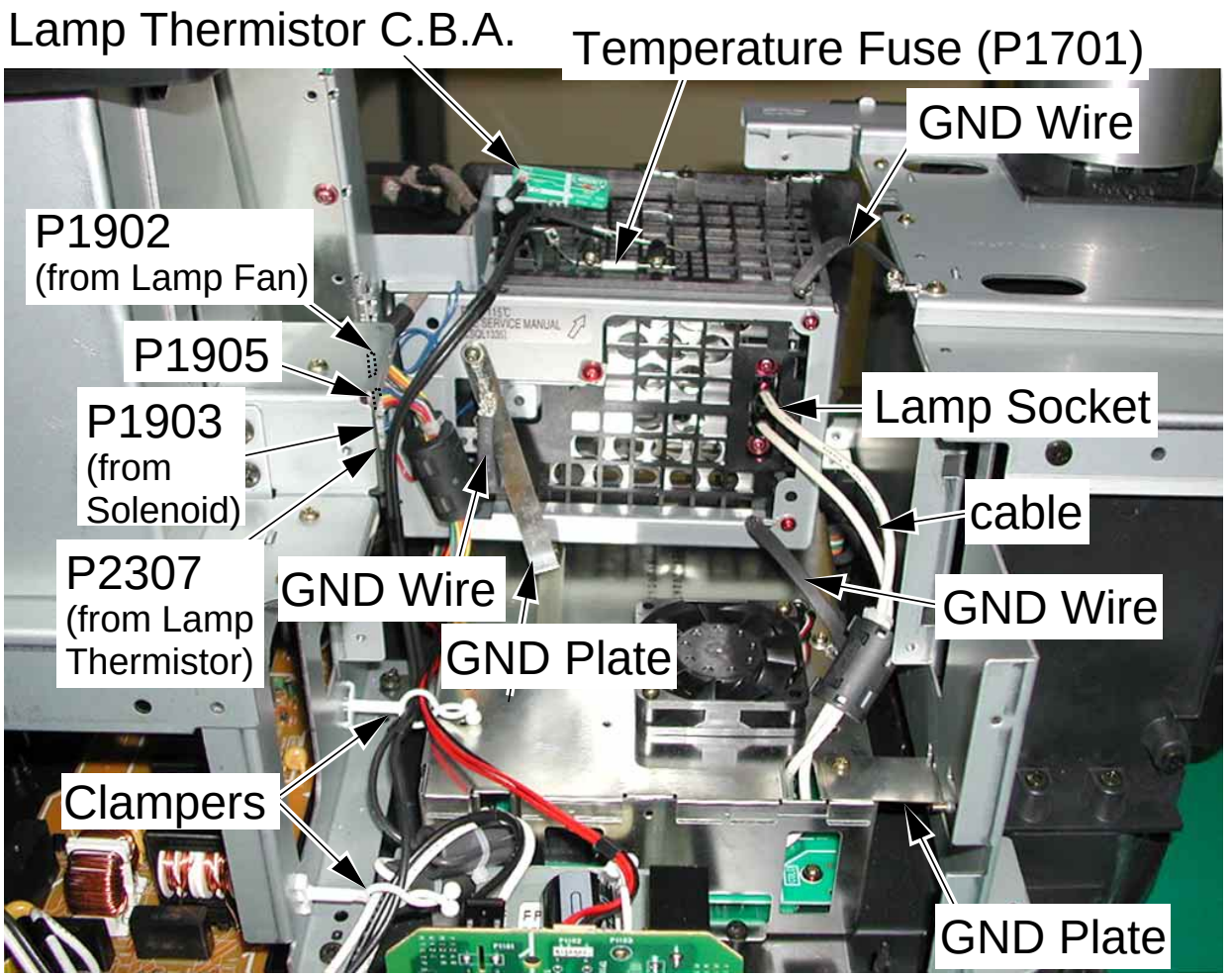

Lamp Thermistor C.B.A.
Temperature Fuse (P1701)
GND Wire
P1902
(from Lamp Fan)
P1905
P1903
(from
Solenoid)
Lamp Socket
cable
P2307
(from Lamp
Thermistor)
GND Wire
GND Wire
GND Plate
Clampers
GND Plate

Fig. 9

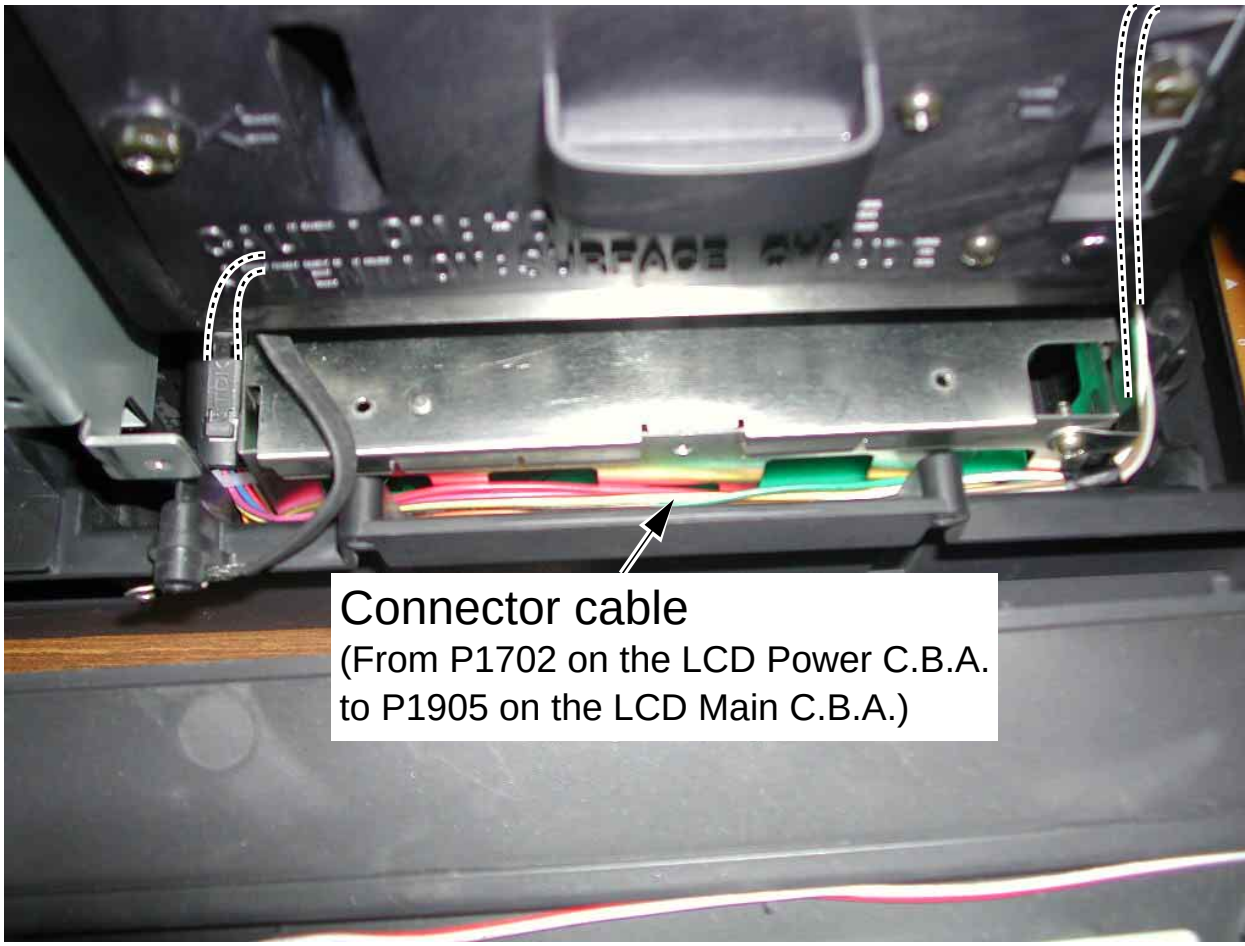

Connector cable
(From P1702 on the LCD Power C.B.A.
to P1905 on the LCD Main C.B.A.)

Fig. 9

SERVICE FIXTURES AND TOOLS

LSUA0035 **Extension Cable**

Note:
This Extension Cable is used only in the location shown in Fig. 11-3 of "Checking position for the TV Main C.B.A. and the Rear Jack C.B.A."

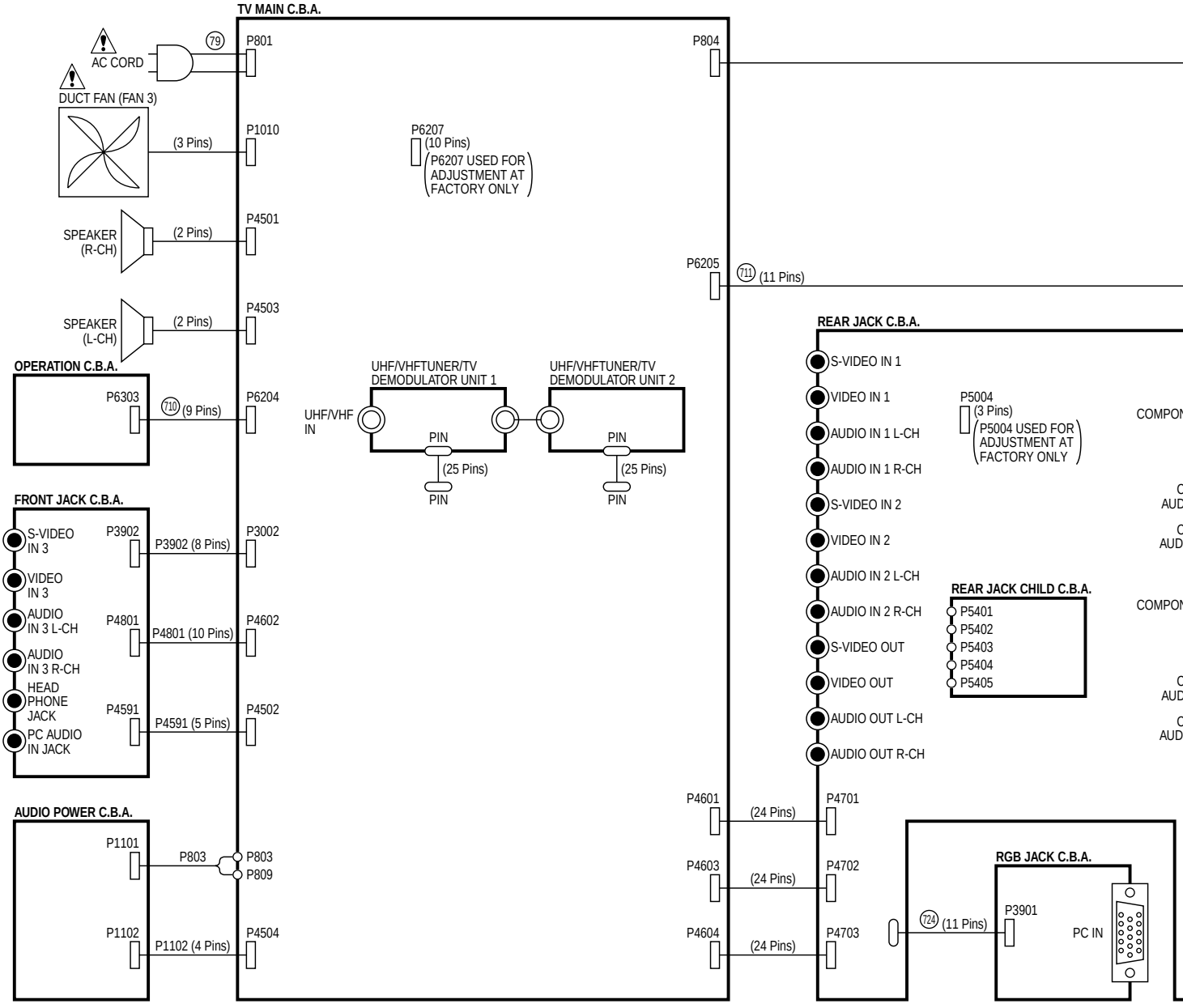
LSYF0532 **Filter tool**

9.2. INTERCONNECTION SCHEMATIC DIAGRAM

INTERCONNECTION SCHEMATIC DIAGRAM

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠
SPECIAL CHARACTERISTICS IMPORTANT FO
WHEN REPLACING ANY OF THESE COMPONE
USE ONLY THE SPECIFIED PARTS.

CAUTION: FOR CONTINUED PROTECTION AG
REPLACE ONLY WITH THE SAME TYPE NUME
ATTENTION: POUR UNE PROTECTION CONTI
D' INCENDIE N' UTILISERQUE DES FUSIBLE D
TYPE NUMÉRO LSJA0411 (115 ℃)

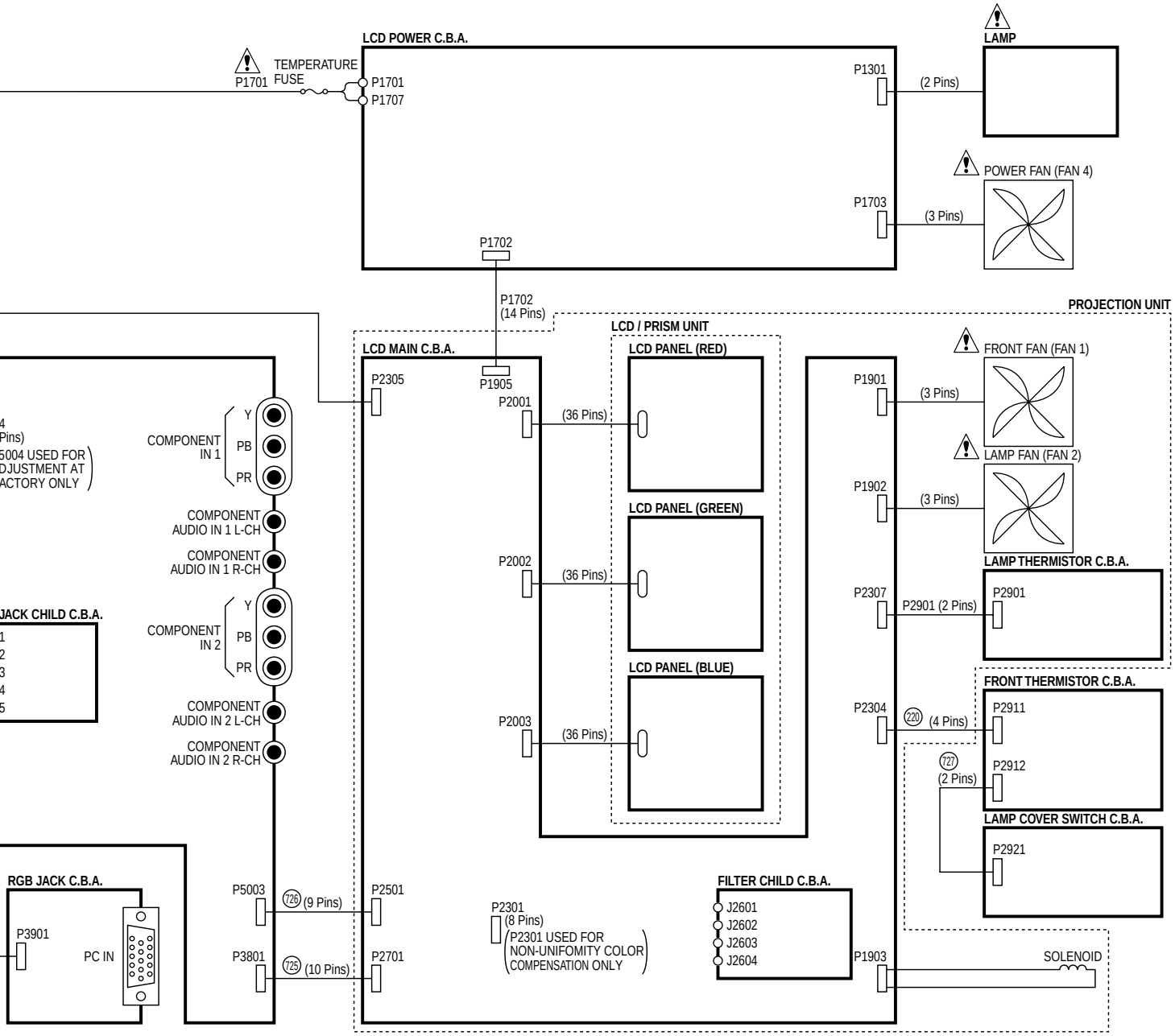


T SAFETY NOTICE:
ITS IDENTIFIED BY THE SIGN ⚠ HAVE
HARACTERISTICS IMPORTANT FOR SAFETY.
LACING ANY OF THESE COMPONENTS,
THE SPECIFIED PARTS.

FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
ONLY WITH THE SAME TYPE NUMBER LSJA0411 (115 °C).
I: POUR UNE PROTECTION CONTINUE LES RISQUES
E N' UTILISERQUE DES FUSIBLE DE MÉME
ÉRO LSJA0411 (115 °C)

NOTE:
LCD POWER C.B.A. IS SUPPLIED AS A UNIT ONLY.
PLEASE NOTE THAT INDIVIDUAL PARTS ON IT ARE NOT SUPPLIED.
HOWEVER, THE PARTS WITH REF. No. ARE AVAILABLE SEPARATELY
AS REPLACEMENT PARTS.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

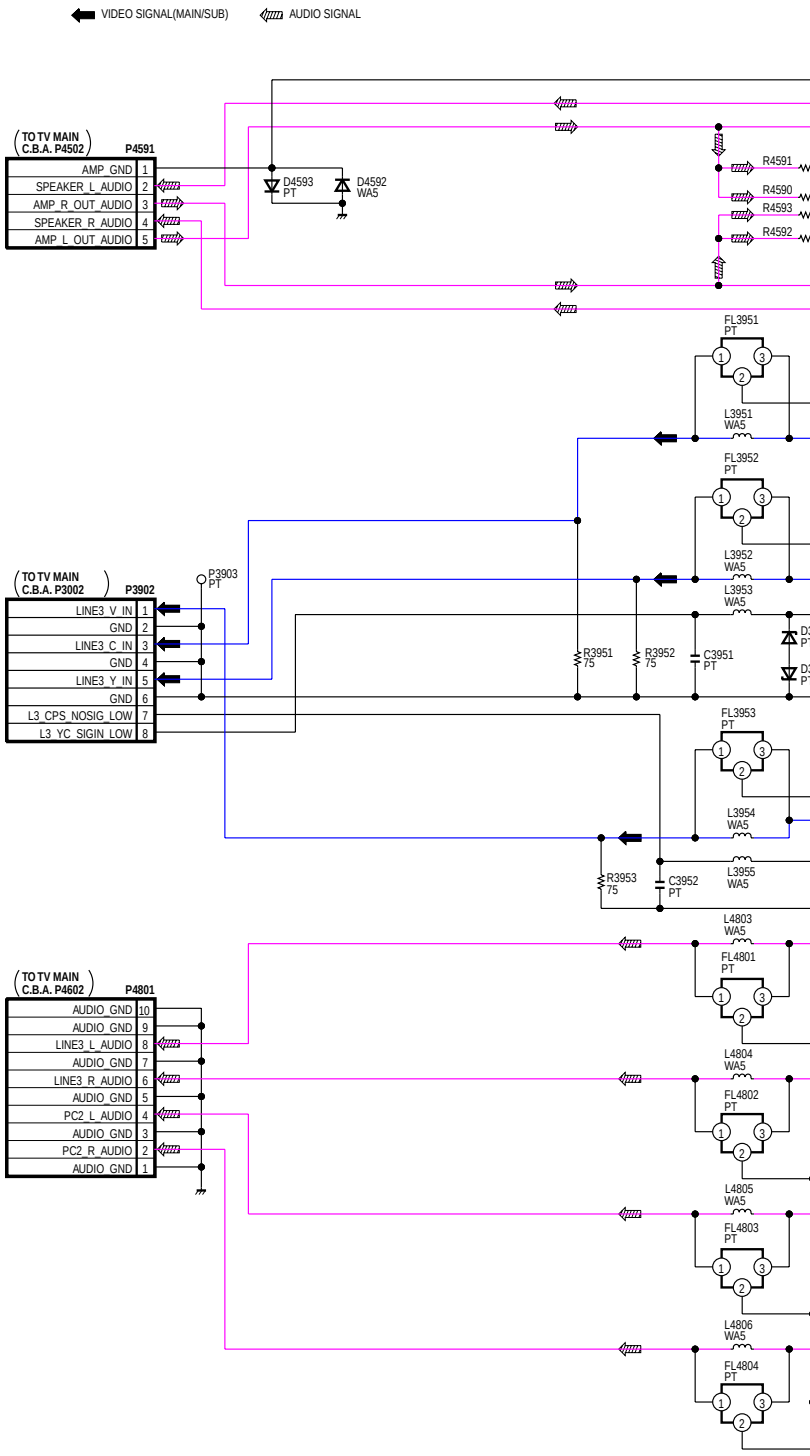


INTERCONNECTION SCHEMATIC DIAGRAM
PT-40LC12/PT-45LC12

9.3. FRONT JACK SCHEMATIC DIAGRAM

FRONT JACK SCHEMATIC DIAGRAM

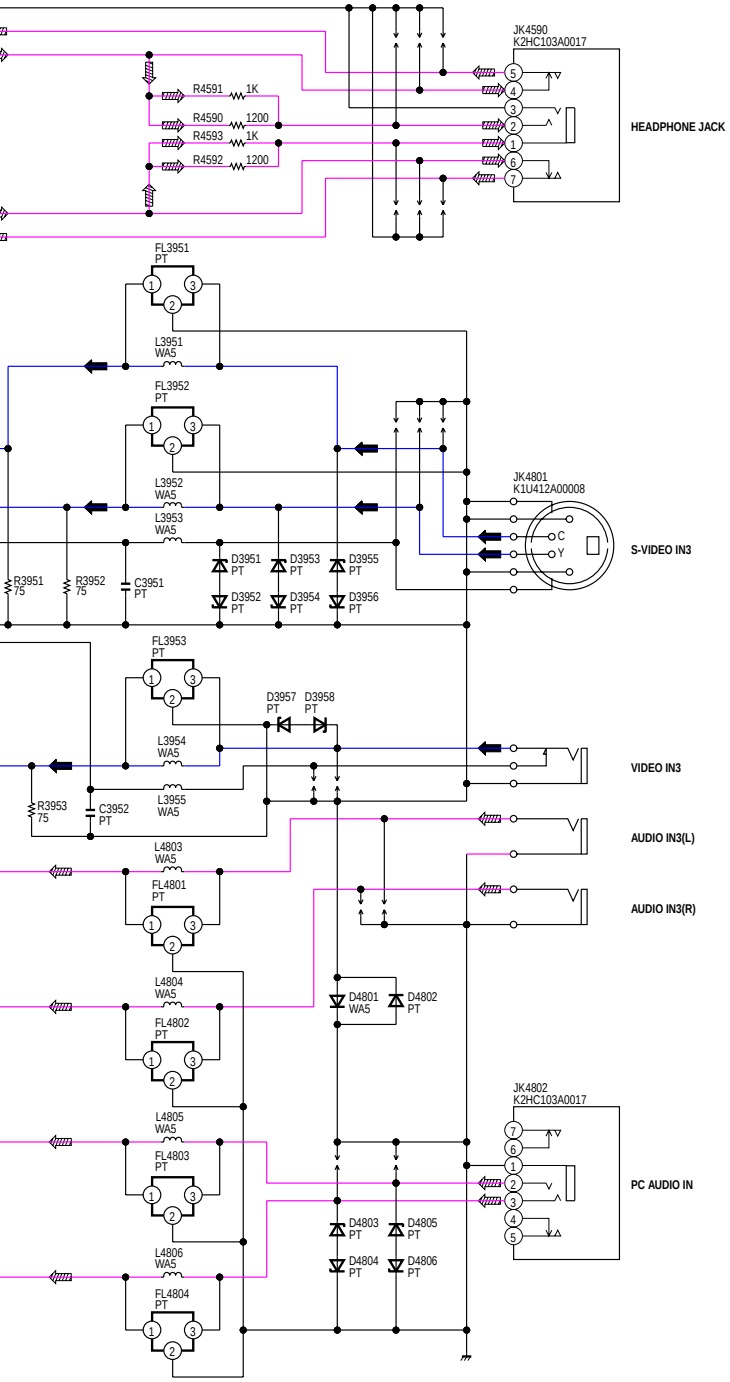
NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT



N DASHED LINES MARKED "PT" ARE NOT USED.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

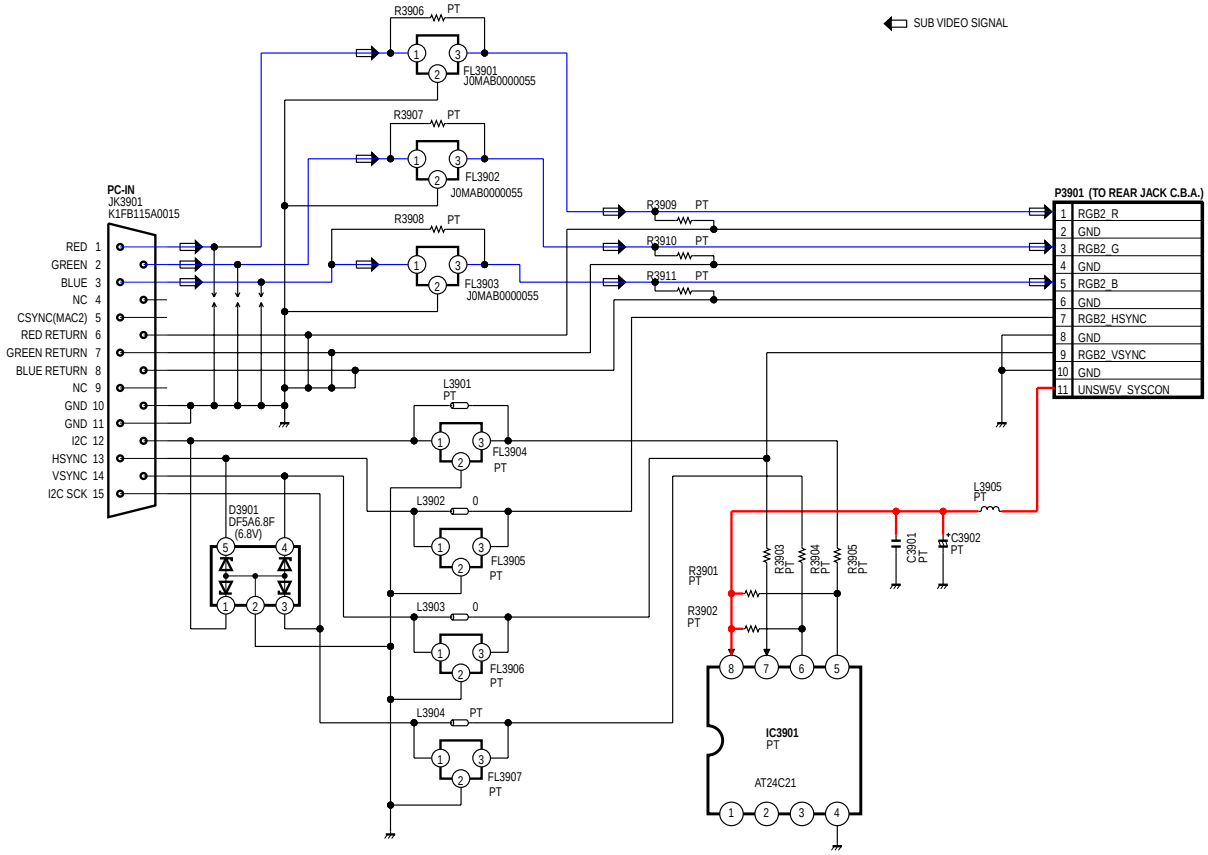


LSJB3068
FRONT JACK SCHEMATIC DIAGRAM
PT-40LC12/PT-45LC12

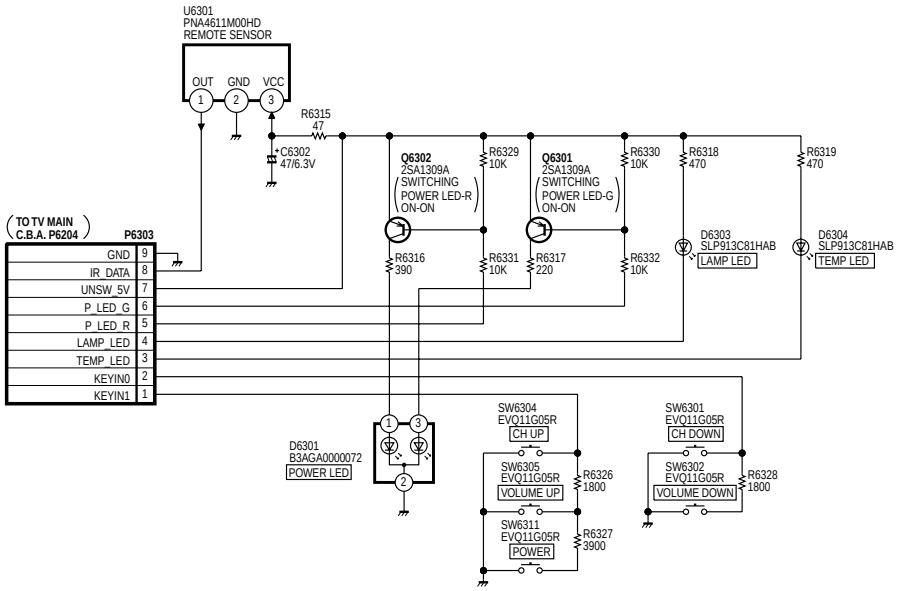
9.4. RGB JACK / OPERATION SCHEMATIC DIAGRAMS

RGB JACK SCHEMATIC DIAGRAM

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT



OPERATION SCHEMATIC DIAGRAM



N DASHED LINES MARKED "PT" ARE NOT USED.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

C.B.A.)

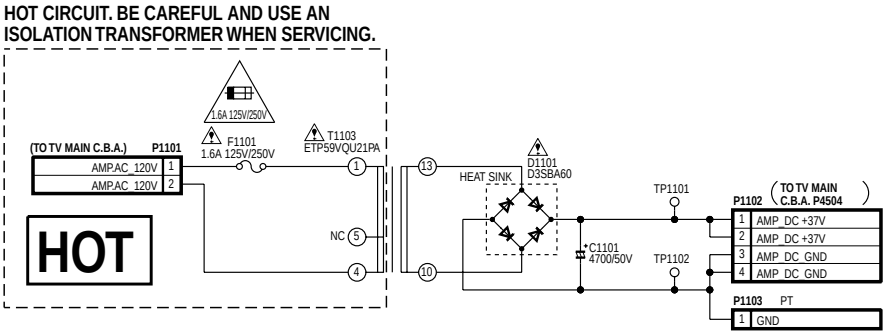
LSJB3072
RGB JACK SCHEMATIC DIAGRAM
LSJB3071
OPERATION SCHEMATIC DIAGRAM
PT-40LC12/PT-45LC12

9.5. AUDIO POWER / LAMP THERMISTOR / FRONT THERMISTOR / LAMP COVER

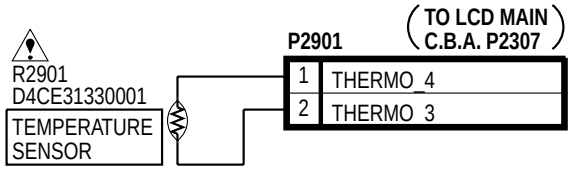
AUDIO POWER SCHEMATIC DIAGRAM

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT

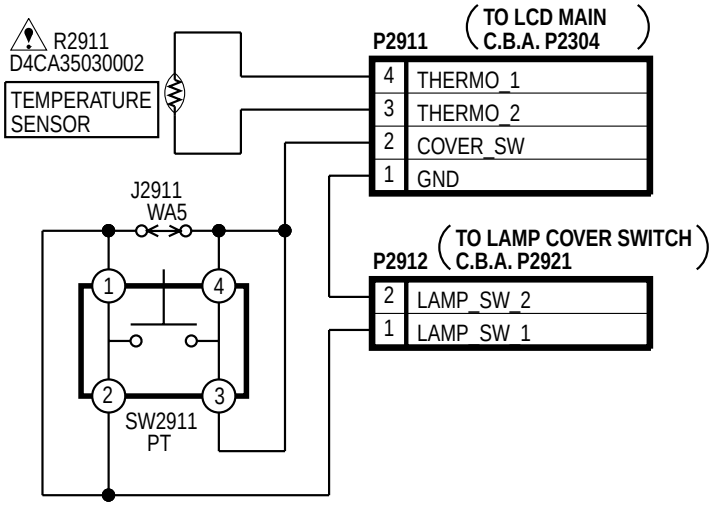
CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE 1.6A 125/250V FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES
D' INCENDIE N' UTILISERQUE DES FUSIBLE DE MÉME
TYPE 1.6A 125/250V



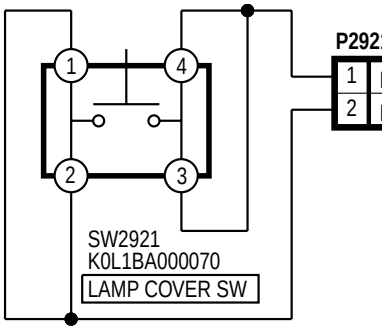
LAMP THERMISTOR SCHEMATIC DIAGRAM



FRONT THERMISTOR SCHEMATIC DIAGRAM



LAMP COVER SWITCH SC



LAMP COVER SWITCH SCHEMATIC DIAGRAMS

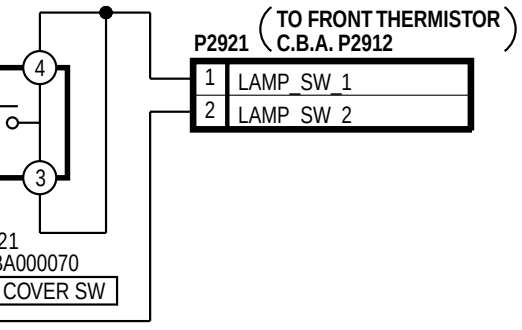
N DASHED LINES MARKED "PT" ARE NOT USED.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

R SWITCH SCHEMATIC DIAGRAM

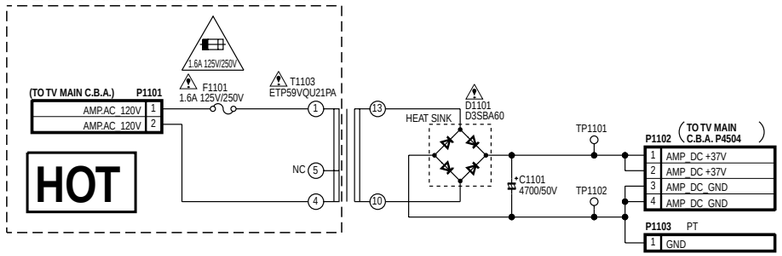


LSJB3065
AUDIO POWER SCHEMATIC DIAGRAM
LSJB3080
LAMP THERMISTOR C.B.A.
LSJB3081
FRONT THERMISTOR C.B.A.
LSJB3082
LAMP COVER SWITCH C.B.A.
PT-40LC12/PT-45LC12

AUDIO POWER SCHEMATIC DIAGRAM

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE 1.6A 125/250V FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES
D' INCENDIE N' UTILISERQUE DES FUSIBLE DE MÉME
TYPE 1.6A 125/250V

HOT CIRCUIT. BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.



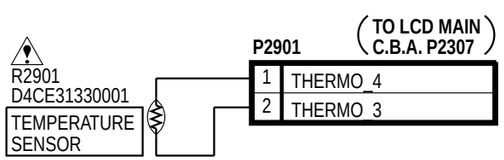
NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

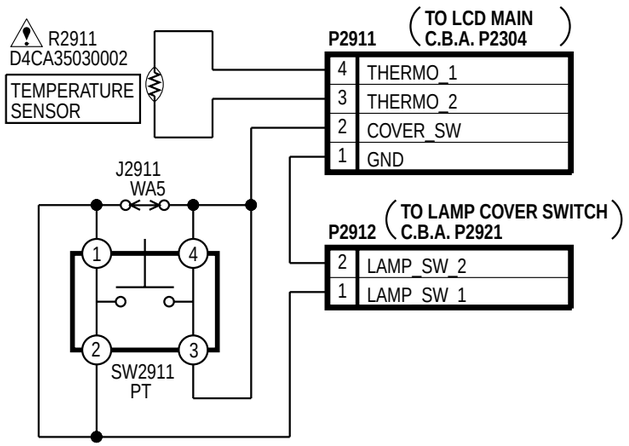
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

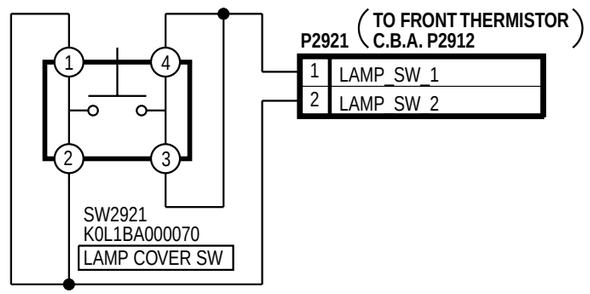
LAMP THERMISTOR SCHEMATIC DIAGRAM



FRONT THERMISTOR SCHEMATIC DIAGRAM



LAMP COVER SWITCH SCHEMATIC DIAGRAM



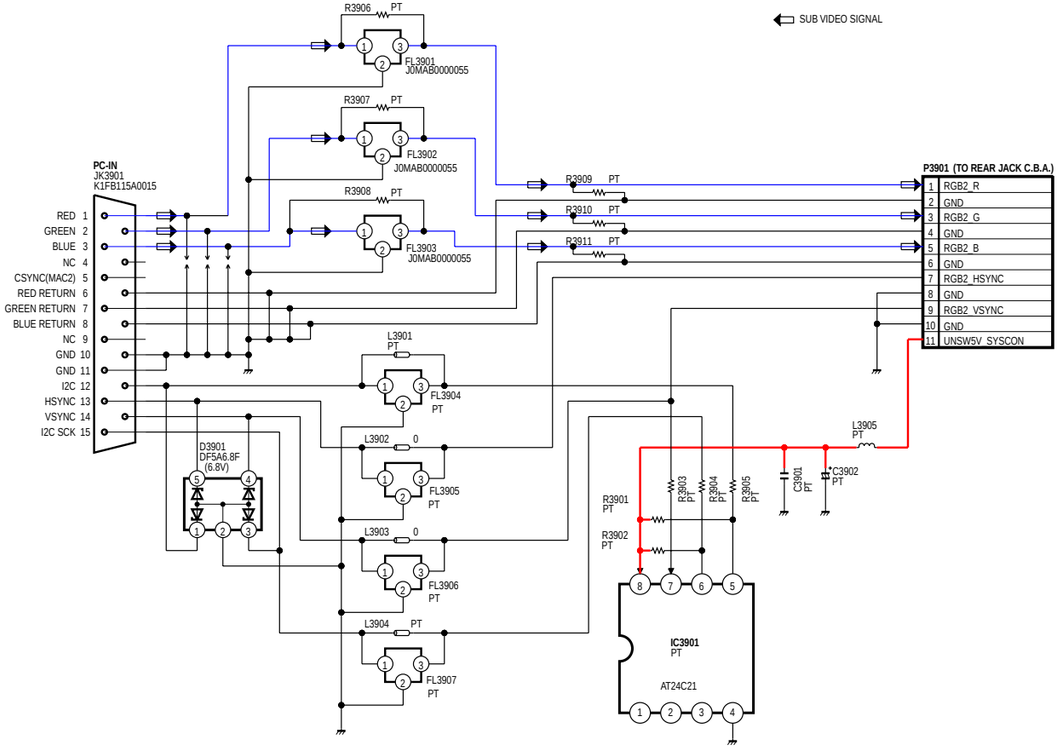
LSJB3065
AUDIO POWER SCHEMATIC DIAGRAM
LSJB3080
LAMP THERMISTOR C.B.A.
LSJB3081
FRONT THERMISTOR C.B.A.
LSJB3082
LAMP COVER SWITCH C.B.A.
PT-40LC12/PT-45LC12

RGB JACK SCHEMATIC DIAGRAM

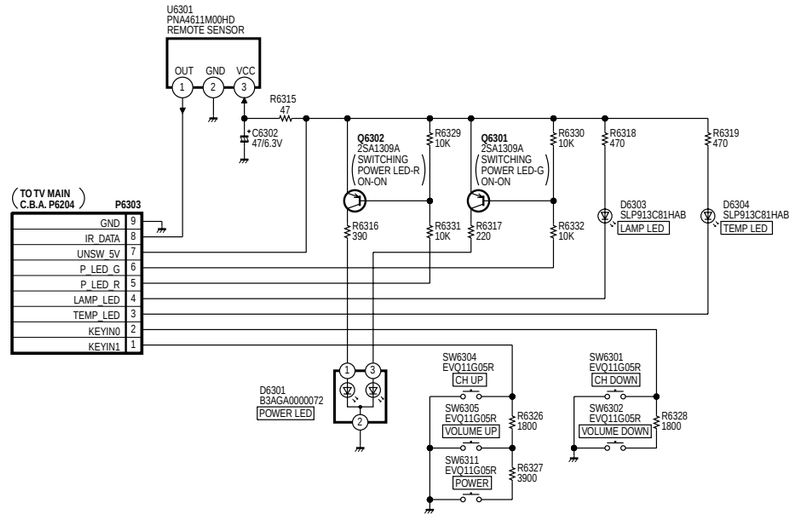
NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.



OPERATION SCHEMATIC DIAGRAM



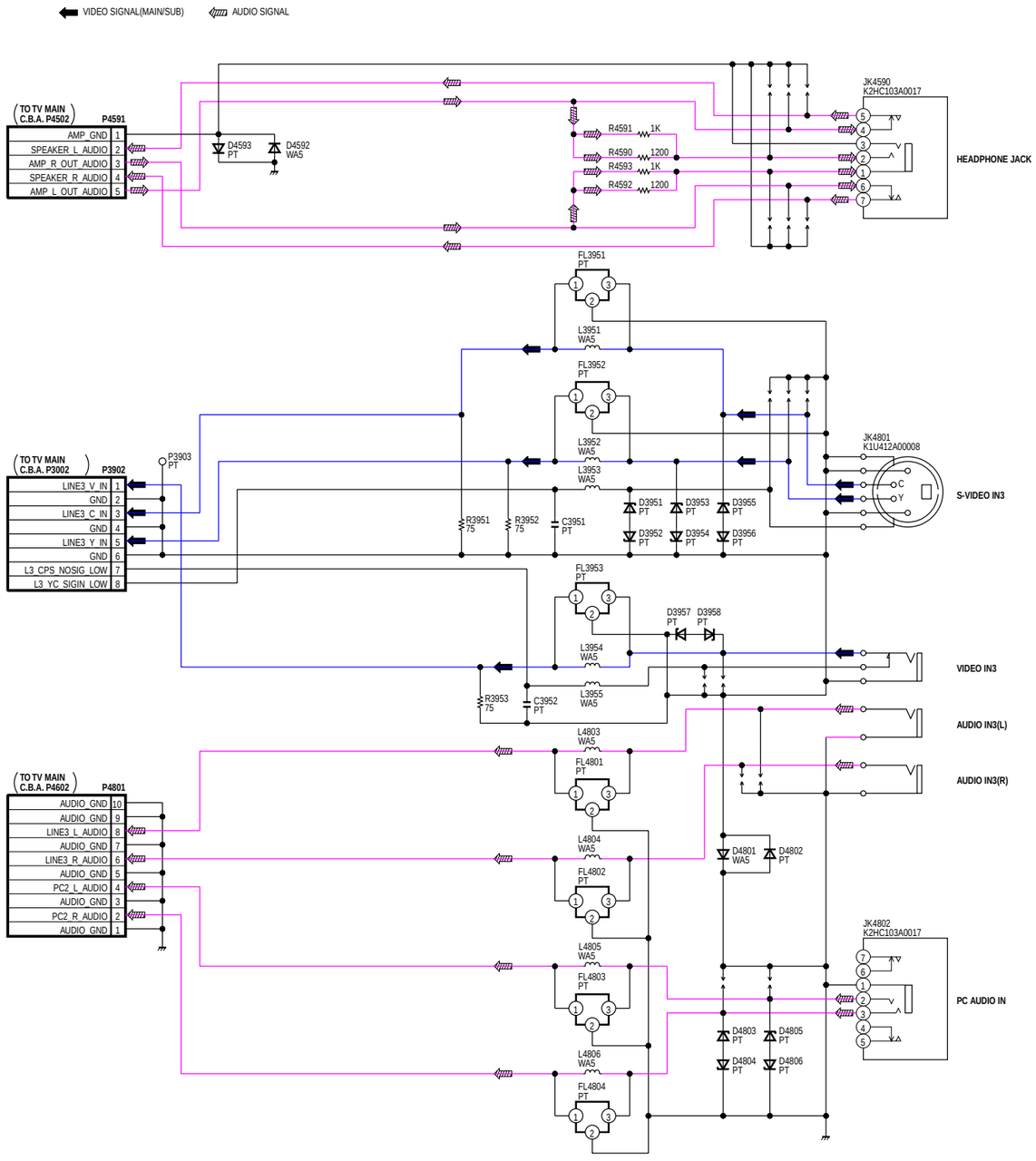
LSJB3072
RGB JACK SCHEMATIC DIAGRAM
LSJB3071
OPERATION SCHEMATIC DIAGRAM
PT-40LC12/PT-45LC12

FRONT JACK SCHEMATIC DIAGRAM

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.



LSJB3068
FRONT JACK SCHEMATIC DIAGRAM
PT-40LC12/PT-45LC12

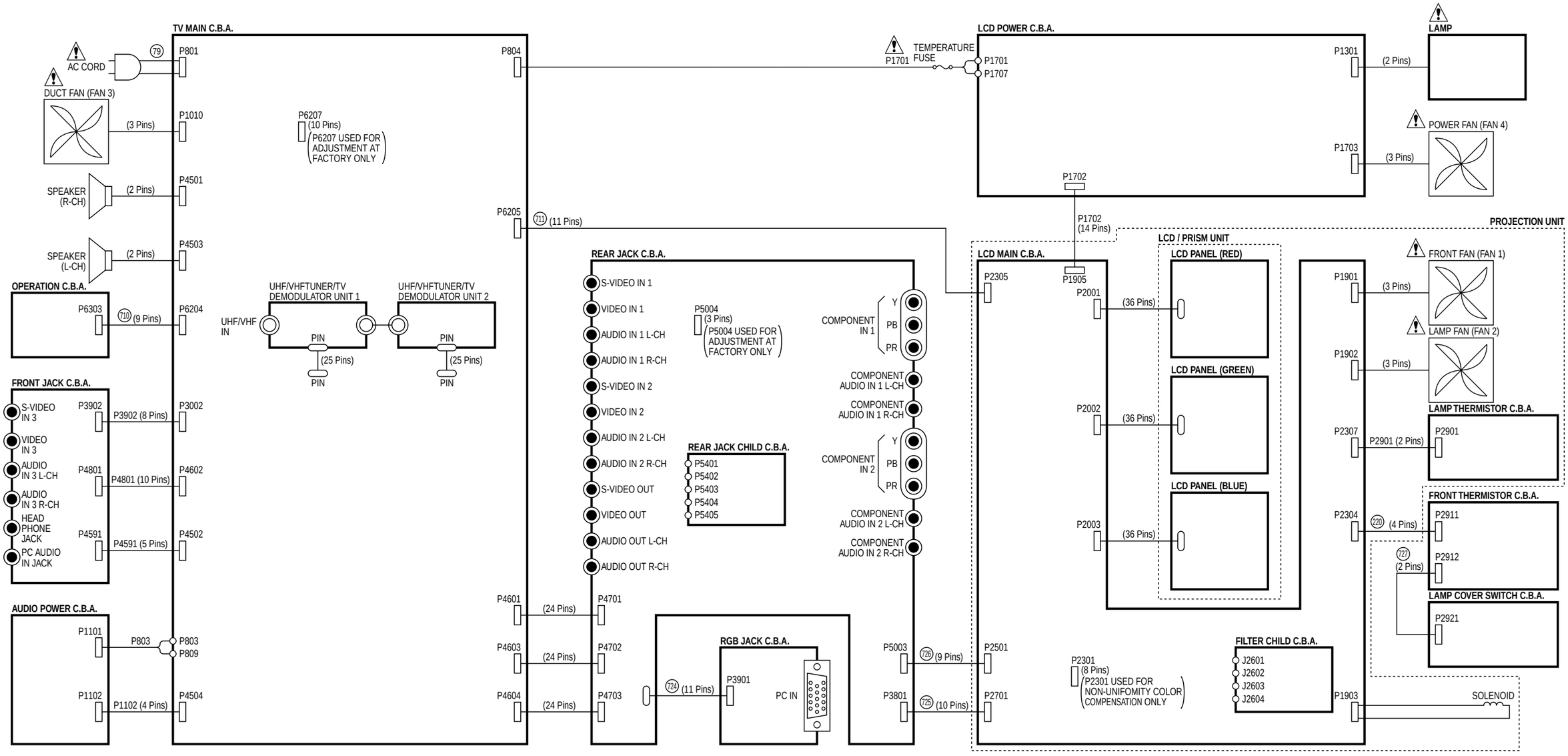
INTERCONNECTION SCHEMATIC DIAGRAM

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE NUMBER LSJA0411 (115 ℃).
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES D' INCENDIE N' UTILISERQUE DES FUSIBLE DE MÉME TYPE NUMÉRO LSJA0411 (115 ℃)

NOTE:
LCD POWER C.B.A. IS SUPPLIED AS A UNIT ONLY.
PLEASE NOTE THAT INDIVIDUAL PARTS ON IT ARE NOT SUPPLIED.
HOWEVER, THE PARTS WITH REF. No. ARE AVAILABLE SEPARATELY AS REPLACEMENT PARTS.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.



1. **Important safety notice**
   Components identified by the sign ⚠ have special characteristics important for safety. When replacing any of these components. Use only the specified parts.

2. Do not use the part number shown on this drawing for ordering.
   The correct part number and part value is shown in the parts list, and may be slightly different or amended since this drawing was prepared.

3. Use only original replacement parts:
   To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.

4. Parts different in shape or size may be used.
   However, only interchangeable parts will be supplied as service replacement parts.

5. Test point information
   ● : Test point with a jumper wire across a hole in P.C.B.
   ○ : Test point with no test pin.

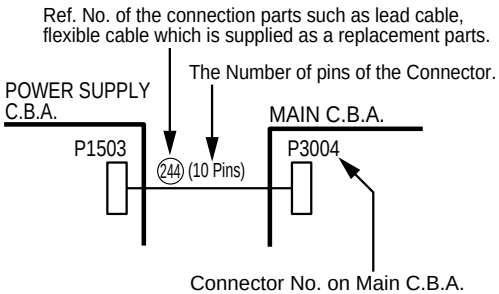
Schematic Diagram Notes

1. Indication for Zener Voltage of Zener Diodes
   The Zener Voltage of Zener Diodes are indicated as such on Schematic Diagrams.

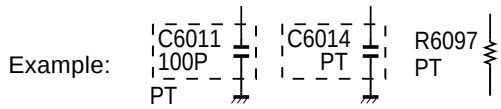
   Example:
   (6.2V).....Zener Voltage

2. How to identify Connectors
   Each connector is labeled with a Connector No. and Pin No. Indicating what it is connected to,
   in other words, its counter part.
   Use the interconnection schematic diagram to find the connection between associated connectors.

   Example:
   The connections between C.B.A.s are shown below.


Ref. No. of the connection parts such as lead cable, flexible cable which is supplied as a replacement parts.
The Number of pins of the Connector.
POWER SUPPLY C.B.A.
MAIN C.B.A.
P1503
244 (10 Pins)
P3004
Connector No. on Main C.B.A.

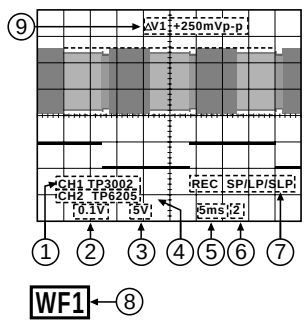
3. Parts marked "PT" are not used in any models included in this service model.



4. Jumper wires are used for WA10, WA5 etc and these are not supplied as replacement parts.

Signal Waveform Note

How to read Signal Waveform



① Connecting Point
② Volts/Div
③ Volts/Div
④ Connecting Point
⑤ Time/Div
⑥ Trigger Channel of the scope
(1:CH1,2:CH2)
⑦ Operation Mode of VCR
⑧ Waveform Point on Schematic
⑨ ΔV1:Peak to Peak

Circuit Board Layout Note

Circuit Board Layout shows components installed for various models.
For proper parts content for the model you are servicing, please refer to the schematic diagram and parts list.

NOTE:
Circuit Board Layout includes components which are not used.

I/O CHART OF IC6001

Pin No.	I/O	Port No.	Signal Name	Description
1	I	P64	POWER_DOWN_L	POWER DOWN(L)
2	-	P63	NC	(Not used)
3	-	P62	NC	(Not used)
4	-	P61	NC	(Not used)
5	I	P60	IR_DATA	IR-DATA
6	-	P54	NC	(Not used)
7	I	P52	DTS_REQ	DTS(IC6501) REQUEST(L)
8	I/O	P53	DTS_CS/BUSY	DTS(IC6501) CS(L)/BUSY(L)
9	I	P51	OSD_BUSY	OSD(IC9510) BUSY(H)
10	O	P50	OSD_CS	TV OSD(IC9510) CS(L)
11	O	P07	OSD_SCK	TV OSD SERIAL CLOCK
12	-	P06	NC	(Not used)
13	O	P05	OSD_DATA_OUT	TV OSD SERIAL DATA
14	O	P02	SCK	SERIAL CLOCK
15	I	P01	S_DATA_IN	SERIAL DATA 1
16	O	P00	S_DATA_OUT	SERIAL DATA 0
17	I/O	P27	I2C_DATA	I2C SERIAL DATA
18	O	P26	I2C_CLK	I2C SERIAL CLOCK
19	-	P46	NC	(Not used)
20	O	P44	M_CC_CS_L	MAIN CCV(IC5001) CS(L)
21	O	P42	S_CC_CS_L	SUB CCV(IC5302) CS(L)
22	O	P40	PROJ_CPU_CS	PROJECTOR MICROCONTROLLER(IC2301) CS(L)
23	-	-	NC	(Not used)
24	-	-	NC	(Not used)
25	I	P04	RST_L	RESET(L)
26	O	P17	A_SW_CTL_2	AUDIO SWITHING CONTROL 2 ※1
27	O	P16	A_SW_CTL_1	AUDIO SWITHING CONTROL 1 ※1
28	O	P15	CPN1_H	COMPONENT 1(H)/COMPONENT 2(L)
29	O	P14	PC1_H	PC(H)/SUB VIDEO(L)
30	O	P13	COMP_VIDEO_COMP_H	COMPONENT (H)/S-VIDEO & VIDEO(L)
31	-	P12	P12	(Not used)
32	O	P11	M_VIDEO_S_IN_H	S-VIDEO(H)/VIDEO(L)
33	-	-	NC	(Not used)
34	-	-	NC	(Not used)
35	I	P25	S_LINE_SD_L	SUB LINE SIGNAL(L)
36	I	-	DVDD	VDD (+5V)
37	O	-	OSC_OUT	OSC 2 (14.32MHz)
38	I	-	OSC_IN	OSC 1 (14.32MHz)
39	-	-	DVSS	Ground
40	-	P24	NC	(Not used)
41	-	P23	NC	(Not used)
42	-	-	SXI	SXI
43	O	P22	TV_DEFEAT_H	TUNER AUDIO DEFEAT(H)
44	O	P21	TV_MONO_H/MTS_L	TUNER MONO(H)/STEREO(L)
45	O	P20	TV_MAIN_L/SAP_H	TUNER MAIN(L)/SAP(H)
46	I	PB7	TV_MTS_IN_L	TUNER MTS SIGNAL(L)
47	I	PB6	TV_SAP_IN_L	TUNER SAP SIGNAL(L)
48	-	-	OSD_VSS	Ground
49	-	PB5	NC	(Not used)
50	-	PB4	PB4	(Not used)

Pin No.	I/O	Port No.	Signal Name	Description
51	I	-	OSD_VDD	VDD (+5V)
52	-	PB3	NC	(Not used)
53	-	PB2	NC	(Not used)
54	-	PB1	NC	(Not used)
55	-	PB0	NC	(Not used)
56	-	PA7	NC	(Not used)
57	-	PA6	NC	(Not used)
58	I	PA5	L3_YC_SIGIN_L	LINE3 S-VIDEO INPUT TERMINAL CONNECT(L)/NO CONNECT(H)
59	I	PA4	L2_YC_SIGIN_L	LINE2 S-VIDEO INPUT TERMINAL CONNECT(L)/NO CONNECT(H)
60	I	PA3	L1_YC_SIGIN_L	LINE1 S-VIDEO INPUT TERMINAL CONNECT(L)/NO CONNECT(H)
61	I	PA2	L3_CPS_NOSIG_L	LINE3 VIDEO INPUT TERMINAL CONNECT(H)/NO CONNECT(L)
62	I	PA1	L2_CPS_NOSIG_L	LINE2 VIDEO INPUT TERMINAL CONNECT(H)/NO CONNECT(L)
63	I	PA0	L1_CPS_NOSIG_L	LINE1 VIDEO INPUT TERMINAL CONNECT(H)/NO CONNECT(L)
64	I	P92	CPN2_NOSIG_L	COMPONENT 2 INPUT TERMINAL CONNECT(H)/NO CONNECT(L)
65	-	-	NC	(Not used)
66	I	P91	CPN1_NOSIG_L	COMPONENT 1 INPUT TERMINAL CONNECT(H)/NO CONNECT(L)
67	-	-	FGF	(Not used)
68	-	-	AFG	(Not used)
69	-	-	NC	(Not used)
70	-	-	NC	(Not used)
71	-	-	AVSS	Ground
72	-	-	NC	(Not used)
73	I	-	AVDD	VDD (+5V)
74	-	-	RCTLP	(Not used)
75	-	-	RCTLN	(Not used)
76	-	-	NC	(Not used)
77	-	P90	NC	(Not used)
78	O	PC3	LINE_MUTE_H	AUDIO LINE OUT MUTE(H)
79	O	PC2	AMP_MUTE_H	AUDIO AMP MUTE(H)
80	O	PC1	AMP_MUTE_L	AUDIO AMP MUTE(L)
81	O	PC0	AUDIO_SW_MUTE_H	AUDIO SW MUTE(H)
82	I	P87	IIC_SVC_L	I2C SERVICE(L)
83	O	P86	FAN3_ON_H	DUCT FAN ON(H)
84	O	P85	FAN3_SD_H	DUCT FAN SPEED CONTROL (HIGH SPEED(H)LOW SPEED(L))
85	I	P84	FAN3_LOCK_H	DUCT FAN LOCK(H)
86	I	P83	THERMO_4	TEMPERATURE DATA 4 (FOR LAMP)
87	I	P82	THERMO_3	TEMPERATURE DATA 3 (FOR LAMP)
88	I	P81	KEYIN1	KEY DATA 1
89	I	P80	KEYIN0	KEY DATA 0
90	O	P77	POWER_ON_L	POWER ON(L)
91	O	P76	PROJ_P_ON_H	PROJECTOR POWER ON(H)
92	O	P75	AMP_POWER_ON_L	AUDIO AMP POWER ON(L)
93	-	P74	NC	(Not used)
94	O	P73	TEMP_LED	TEMP LED ON(L)
95	O	P72	LAMP_LED	LAMP LED ON(L)
96	O	P71	P_LED_R	POWER LED(RED) ON(L)
97	O	P70	P_LED_G	POWER LED(GREEN) ON(L)
98	-	P67	NC	(Not used)
99	-	P66	NC	(Not used)
100	O	P65	SYSTEM_RST_L	RESET(L)

※1

Pin 26	Pin 27	OUTPUT
L	L	COMPONENT 1
L	H	COMPONENT 2
H	H	----------
H	L	PC (RGB)

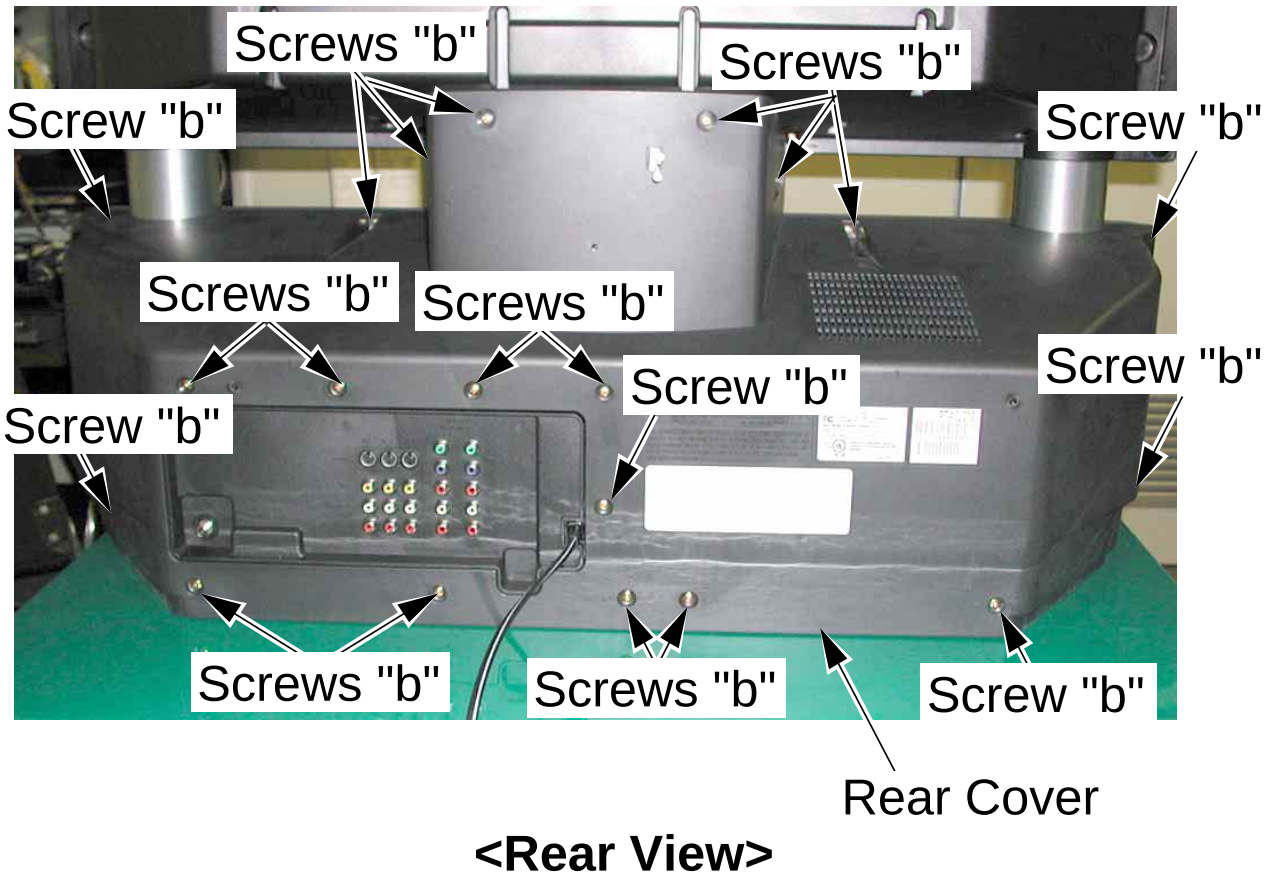
I/O CHART OF IC2301

Pin No.	I/O	Port No.	Signal Name	Description
1	O	P21	VCR_PROJ_PVDATA	SERIAL DATA 1
2	I	P22	VCR_PROJ_SCK	SERIAL CLOCK
3	I	P23	RXD	RS232C RECEIVED DATA
4	O	P24	TXD	RS232C TRANSMITTED DATA
5	-	P25	NC	(Not used)
6	I	-	VDD	VDD (+3.3V)
7	-	-	VSS	Ground
8	-	P26	NC	(Not used)
9	-	P27	NC	(Not used)
10	-	P30	SYS_HS	(Not used)
11	I	P31	L_ERR	LAMP ERROR PULSE (ON(H)/OFF(L)/ERROR(PULSE))
12	I	P32	FAN_LOCK	FRONT/LAMP FAN LOCK(H)
13	-	P33	NC	(Not used)
14	-	P34	NC	(Not used)
15	-	P35	NC	(Not used)
16	-	P36	NC	(Not used)
17	-	P37	NC	(Not used)
18	O	-	VPP	(Not used) <Factory use only>
19	-	P100	NC	(Not used)
20	O	P101	SOL_ON_H	SOLENOID(SHUTTER) ON(H)
21	-	P102	NC	(Not used)
22	-	P103	NC	(Not used)
23	O	P104	PO_EXT_SEL	MAIN SCALER SYNC SELECT (EXTERNAL(H)/INTERNAL(L))
24	O	P105	IP_CLK_ON_H	IP CONVERTER CLOCK ON(H)
25	O	P106	IP_RESET_L	IP CONVERTER RESET(L)
26	-	P107	NC	(Not used)
27	-	P110	VPP_ON_H	(Not used)
28	-	P111	NC	(Not used)
29	-	P112	NC	(Not used)
30	-	P113	NC	(Not used)
31	I	-	RESET	RESET(L)
32	-	P114	NC	(Not used)
33	-	-	XT2	(Not used)
34	I	-	VDD	VDD (+3.3V)
35	O	-	X2	19.66 MHz CLOCK
36	I	-	X1	19.66 MHz CLOCK
37	-	-	VSS	Ground
38	-	-	NC	(Not used)
39	-	P120	NC	(Not used)
40	O	P90	LR_INV	LEFT AND RIGHT REVERSAL CONTROL OF DISPLAY PICTURE
41	O	P91	SYNC_SEL	A KIND OF SIGNAL DETECTION FOR IC9204 (MAIN SCALER(L)/SUB SCALER(H))
42	-	P92	NC	(Not used)
43	-	P93	VIDEO/480I_L	(Not used)
44	I	P94	3.3V_IN	3.3V LINE DETECT (NORMAL(H)/ABNORMAL(L))
45	I	P95	7V_IN	7V LINE DETECT (NORMAL(H)/ABNORMAL(L))
46	O	P96	L_RESET(STBY)	STANDBY(L)/NORMAL(H)
47	I	P40	14V_IN	14V LINE DETECT (NORMAL(H)/ABNORMAL(L))
48	I	P41	16V_IN	16V LINE DETECT (NORMAL(H)/ABNORMAL(L))
49	O	P42	LCD_ON_H	LCD POWER ON(H)
50	O	P43	D_RESET	RESET(L)

Pin No.	I/O	Port No.	Signal Name	Description
51	-	P44	NEW_OSD_H	(Not used) <Factory use only>
52	O	P45	L_ON_H	LAMP ON/OFF CONTROL (ON(H)/OFF(L))
53	O	P46	FAN1_ON_H	FRONT FAN ON(H)
54	O	P47	FAN2_ON_H	LAMP FAN ON(H)
55	I	-	BVDD	VDD (+3.3V)
56	-	-	BVSS	Ground
57	O	P50	TG_CS	TIMING GENERATOR(IC9503) CS (H)
58	O	P51	MAIN_SCALER_CS	MAIN SCALER(IC9202) CS (L)
59	O	P52	SUB_SCALER_CS	SUB SCALER(IC9508) CS (L)
60	O	P53	COLOR_COR_CS	COLOR CORRECTION(IC9801) CS (L)
61	O	P54	DAC1_CS_H	DAC(IC9803) CS (H)
62	-	P55	DAC2_CS_H	(Not used)
63	O	P56	OSD_CS	OSD(IC9510) CS(L)
64	O	P57	SYNC_CS	SYNC SELECTOR(IC9204) CS (L)
65	-	P60	XL_CS	(Not used)
66	O	P61	VCR_OSD_H	TV OSD CS(H)/PROJECTOR OSD CS(L)
67	O	P62	CORRECT_ON_L	NON-UNIFORMITY COLOR CORRECT ON(L)/THROUGH(H)
68	-	P63	PC1_H	(Not used)
69	O	P64	PC/VIDEO_PC_H	PC(H)/SUB VIDEO(L)
70	-	P65	COMP/VIDEO_COMP_H	(Not used)
71	I	-	AVDD	VDD (+3.3V)
72	-	-	AVSS	Ground
73	I	-	AYREF	VDD (+3.3V)
74	I	P70	THERMO1_IN	TEMPERATURE DATA 1 (FOR FRONT FAN)
75	I	P71	THERMO2_IN	TEMPERATURE DATA 2 (FOR FRONT FAN)
76	I	P72	FILTER_OPEN_H	LAMP COVER OPEN(H)
77	-	P73	PC_NC_H	(Not used)
78	-	P74	SELF_CHECK_H	(Not used)
79	-	P75	MAIN_NC_H	(Not used)
80	I	P76	CPS_L	COMPOSITE IN DETECT (L)
81	-	P77	INTLACE	(Not used)
82	I	P80	FILTER_ERR_IN	FILTER ERROR DETECTION (A/D IN)
83	-	P81	THERMO4_IN	(Not used)
84	-	P82	MODE_CHG_H	(Not used) <Factory use only>
85	-	P83	FLASH_WRITE_H	(Not used) <Factory use only>
86	-	P00	NMI	Ground
87	-	P01	NC	(Not used)
88	I	P02	FROM_VCR_CS	IC2301 CS(L) FROM IC6001
89	-	P03	NC	(Not used)
90	-	P04	NC	(Not used)
91	-	P05	NC	(Not used)
92	-	P06	NC	(Not used)
93	-	P07	NC	(Not used)
94	I/O	P10	IIC_DATA	I2C SERIAL DATA
95	-	P11	NC	(Not used)
96	O	P12	IIC_SCK	I2C SERIAL CLOCK
97	I	P13	PROJ_IC_SI	PROJECTOR SERIAL DATA 1
98	O	P14	PROJ_IC_SO	PROJECTOR SERIAL DATA 0
99	O	P15	PROJ_IC_SCK	PROJECTOR SERIAL CLOCK
100	I	P20	VCR_PROJ_VPDATA	SERIAL DATA 0

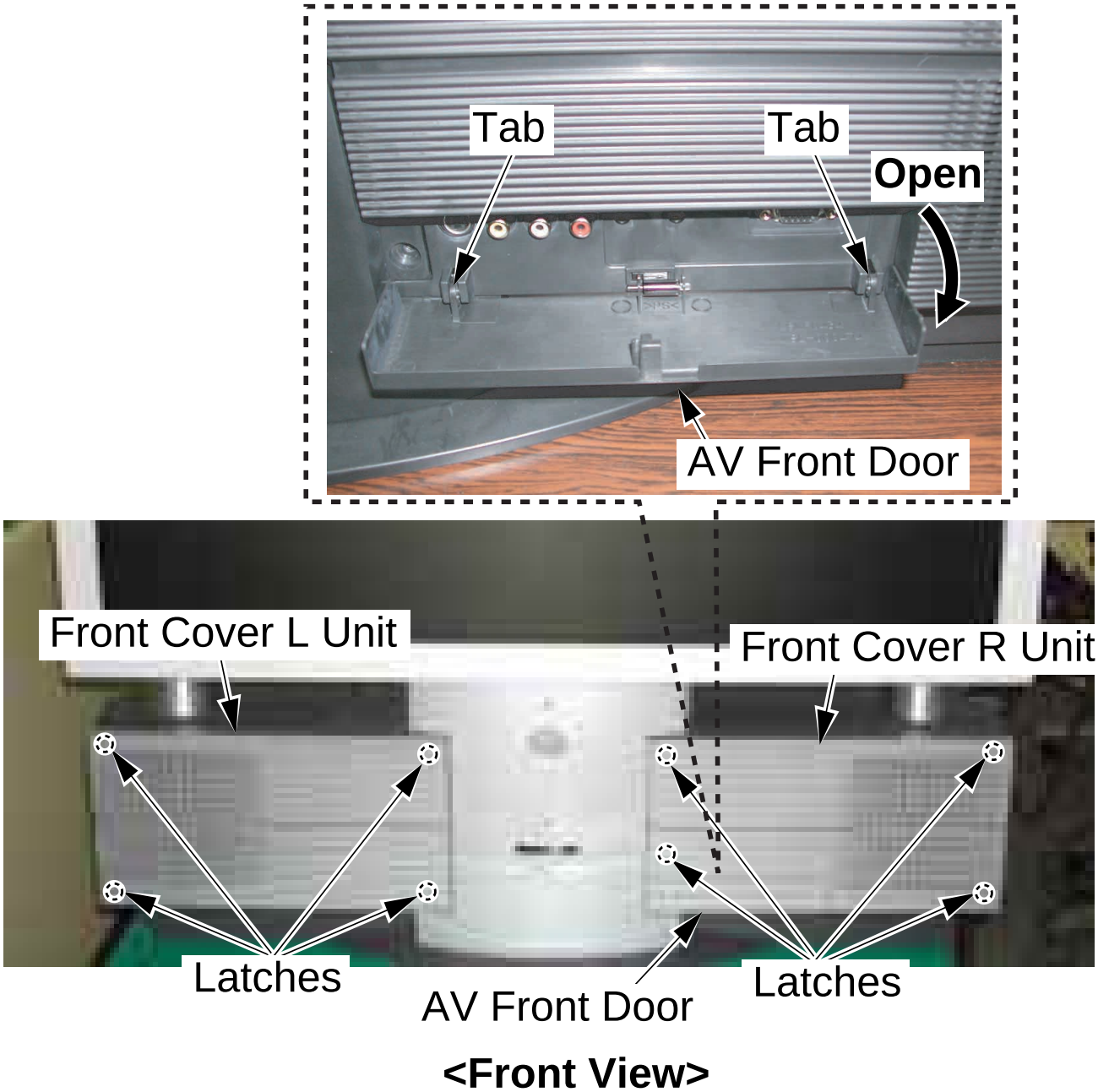
LARGE VIEW FOR DISASSEMBLY/ASSEMBLY OF CABINET

Here are the figures for the detailed reference.



<Rear View>

Fig. D1-1



<Front View>

Fig. D1-2

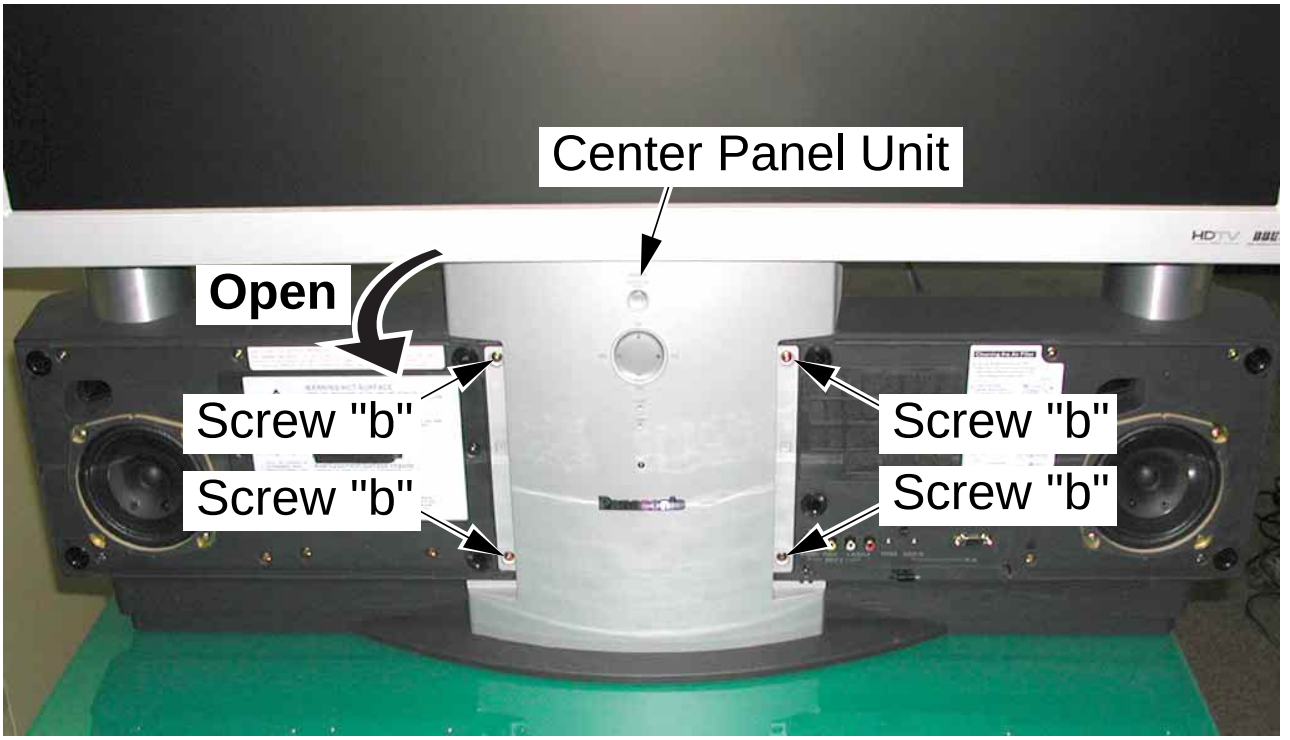


Fig. D1-3

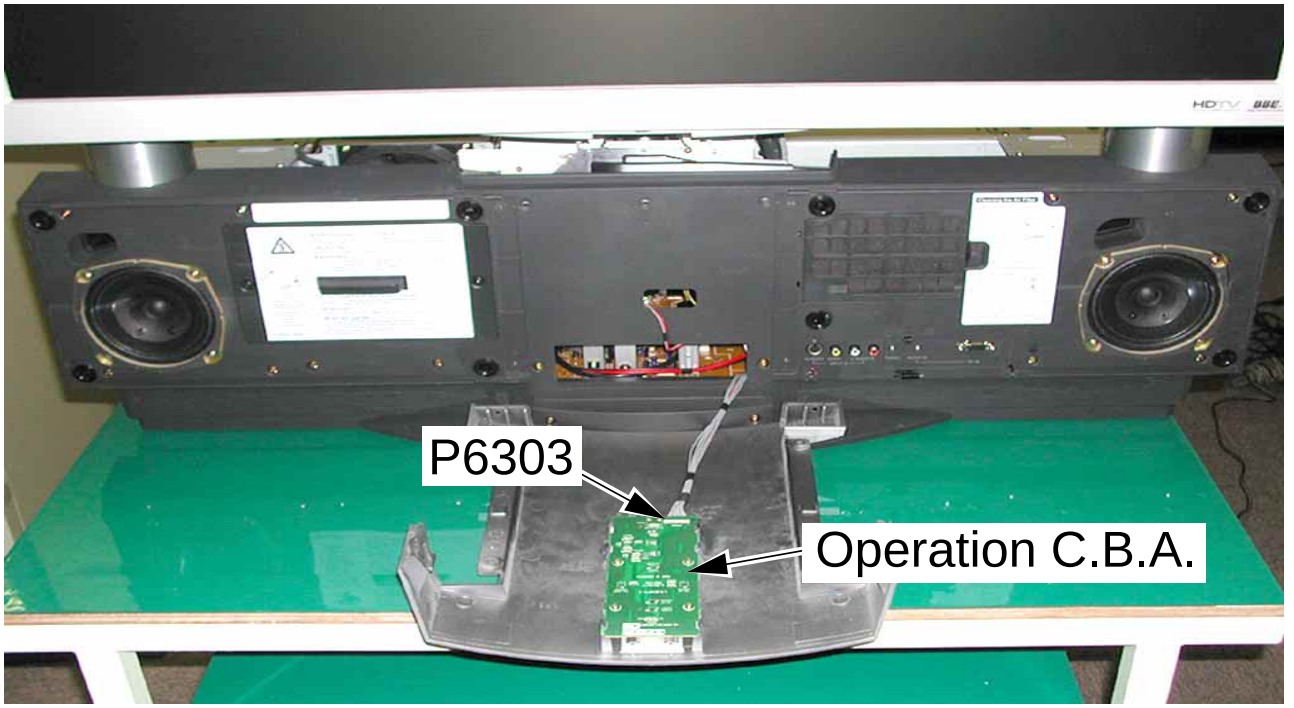


Fig. D1-4

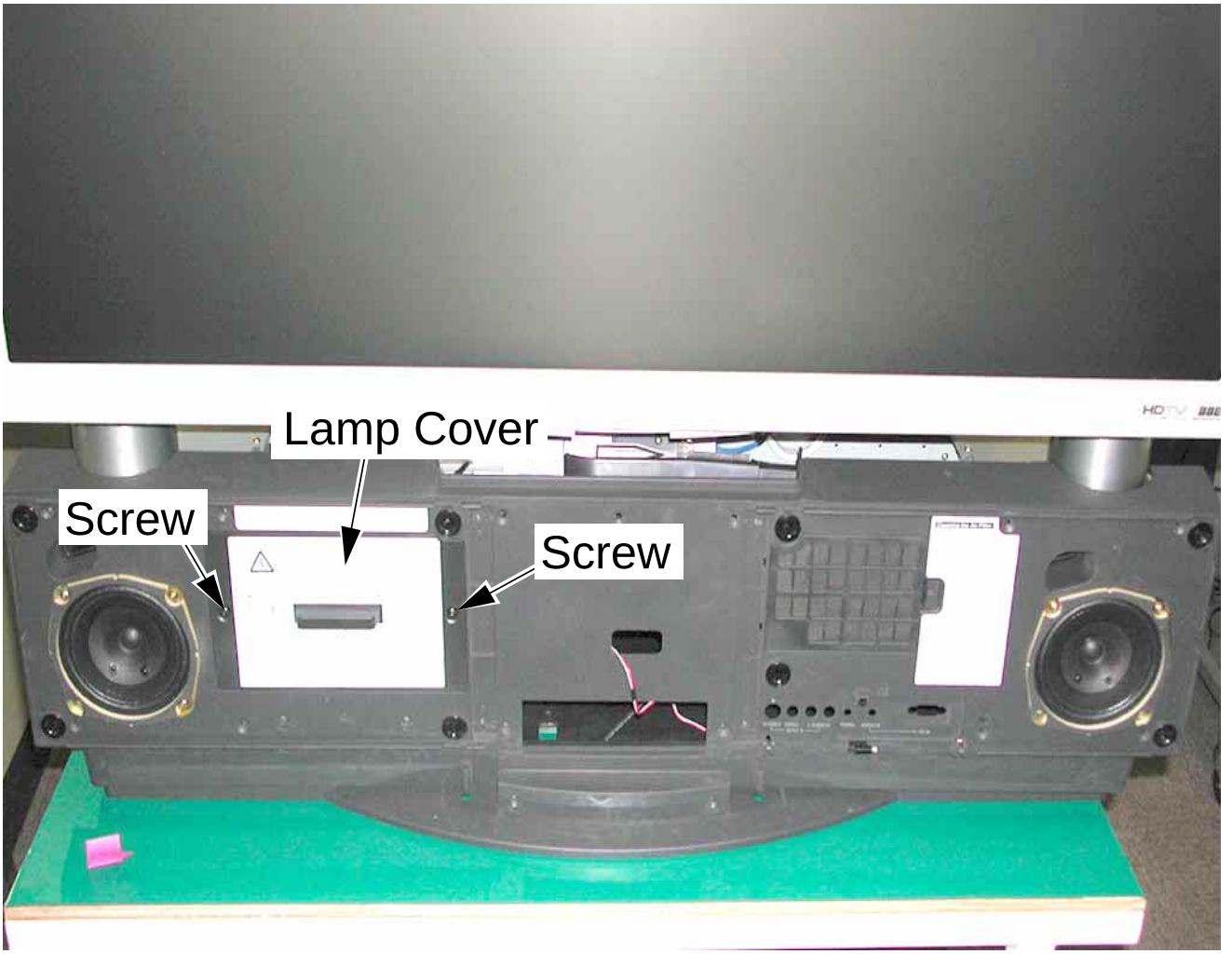


Fig. D1-5

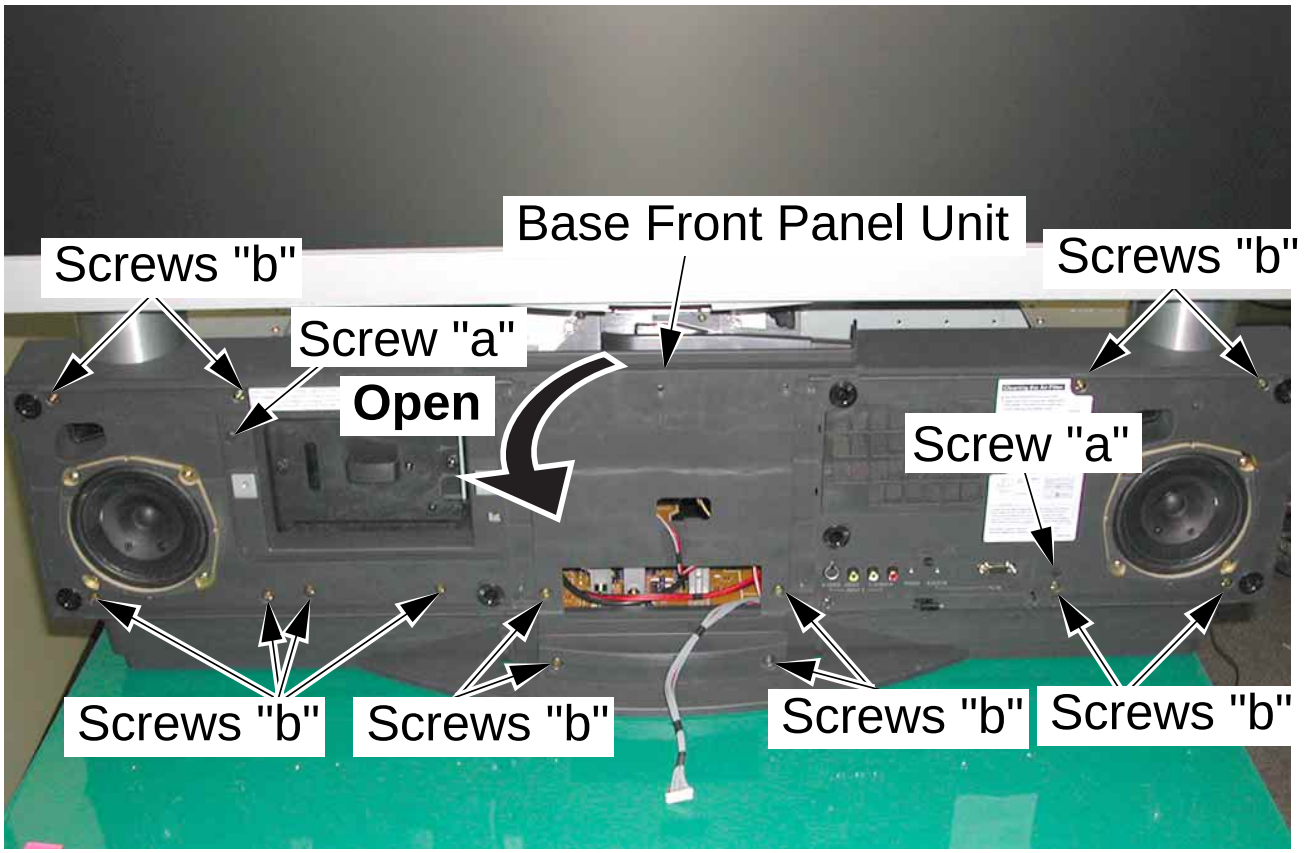

Base Front Panel Unit
Screws "b"
Screws "b"
Screw "a"
Open
Screw "a"
Screws "b"
Screws "b"
Screws "b"
Screws "b"

Fig. D1-6

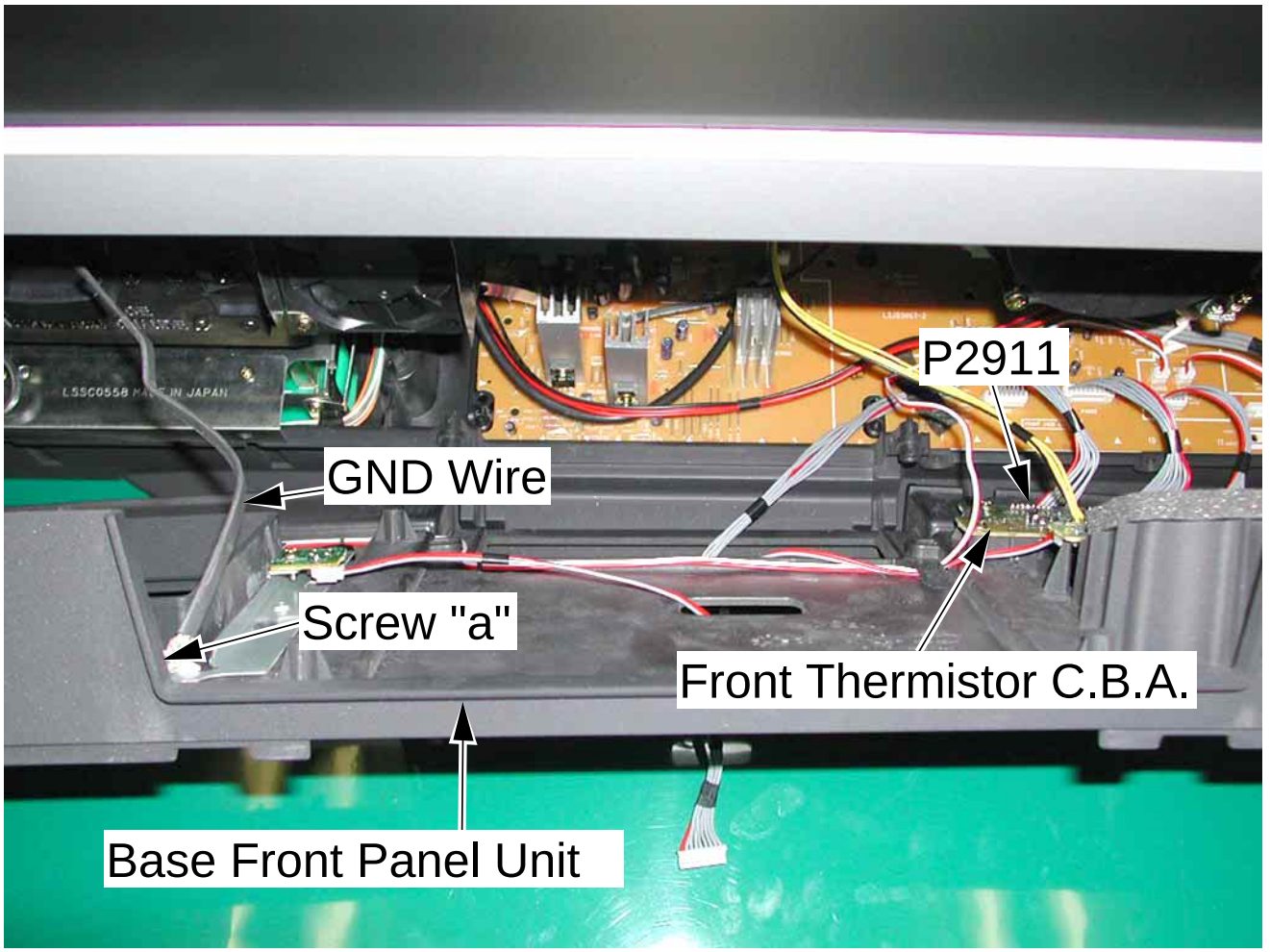
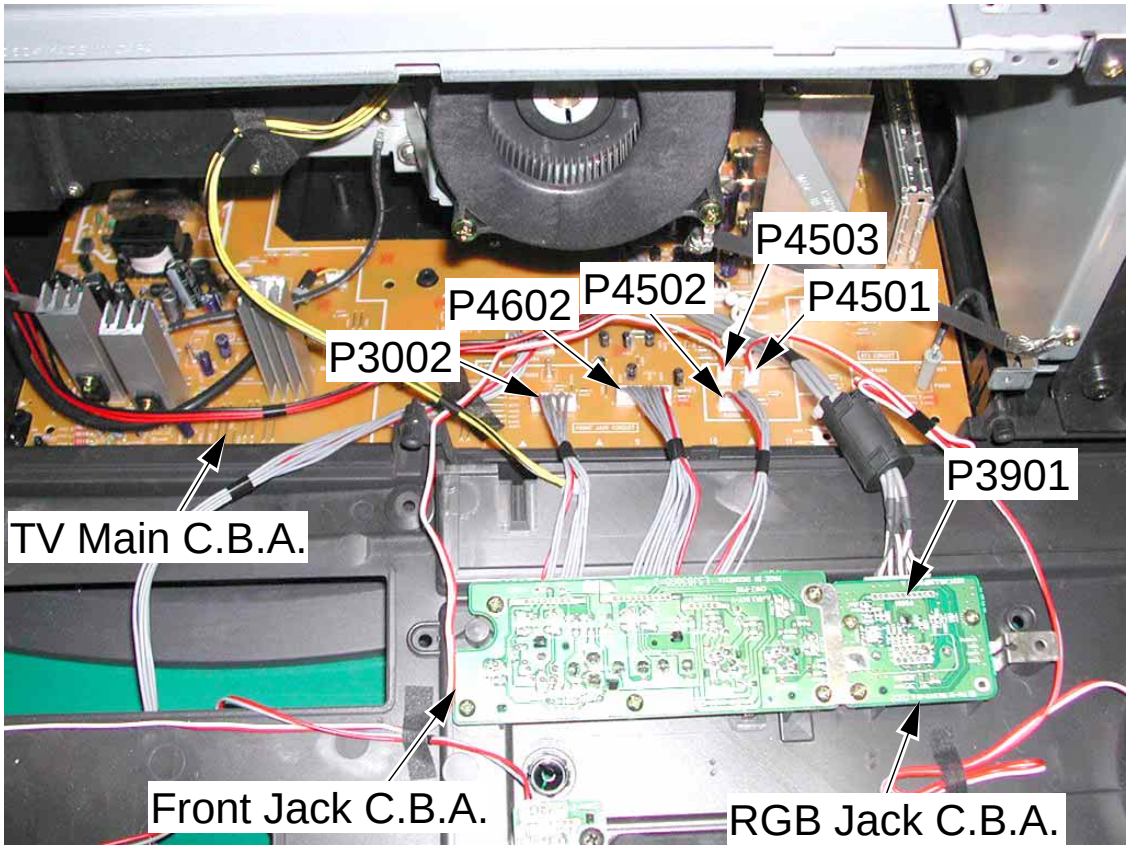
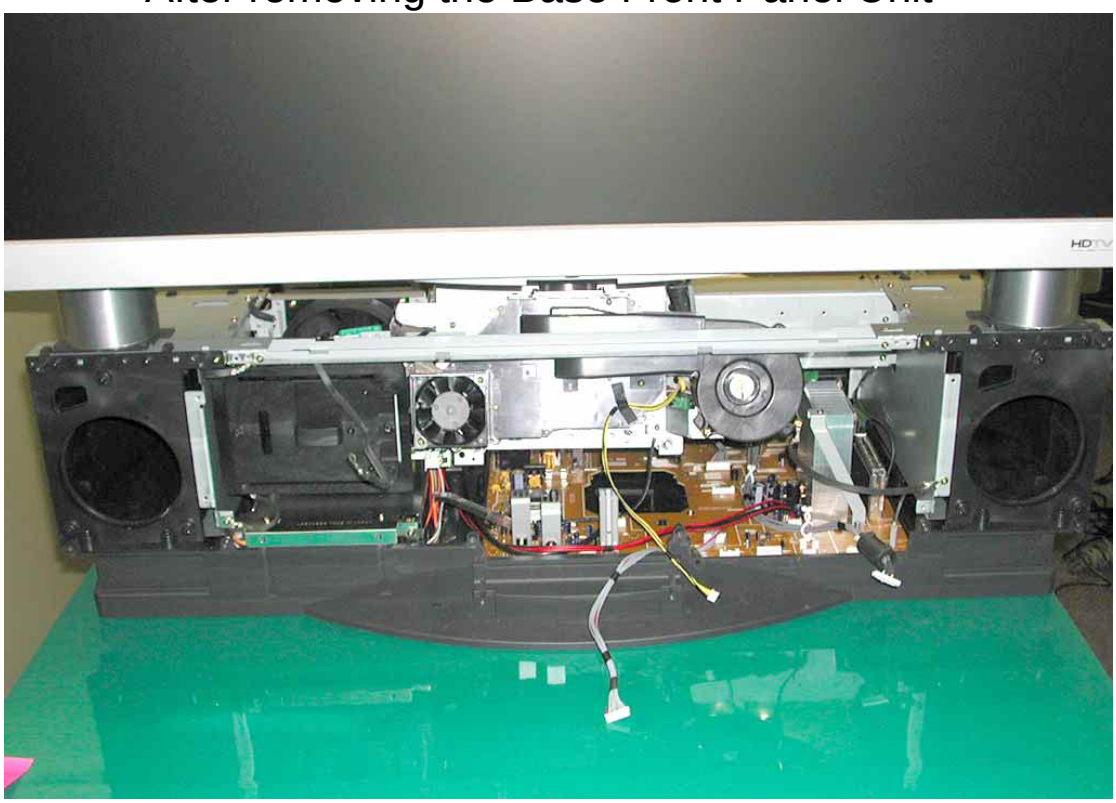

P2911
GND Wire
Screw "a"
Front Thermistor C.B.A.
Base Front Panel Unit

Fig. D1-7



After removing the Base Front Panel Unit



<Front View>

Fig. D1-8

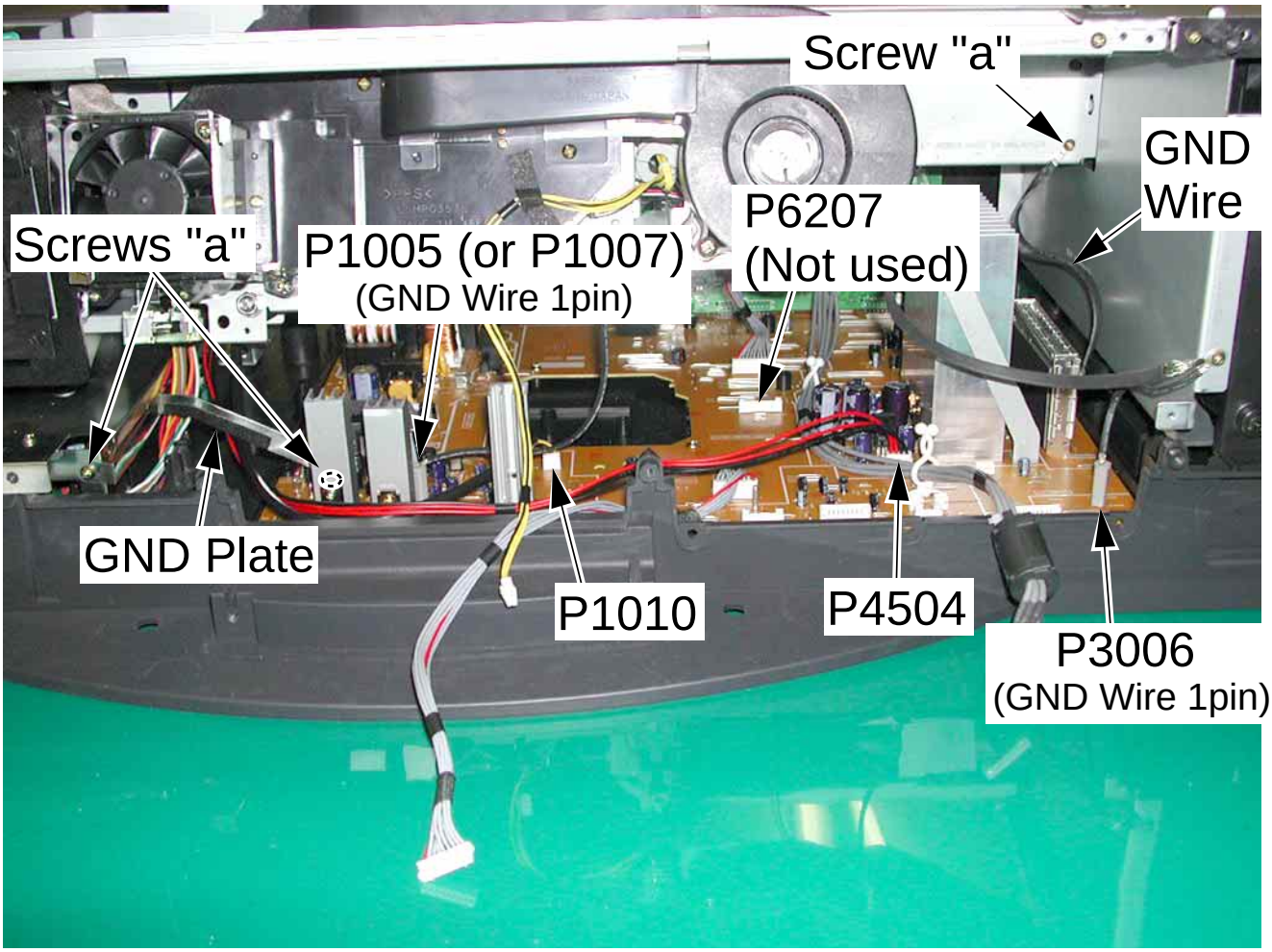

Screw "a"
GND
Wire
P6207
(Not used)
Screws "a"
P1005 (or P1007)
(GND Wire 1pin)
GND Plate
P1010
P4504
P3006
(GND Wire 1pin)

Fig. D1-9

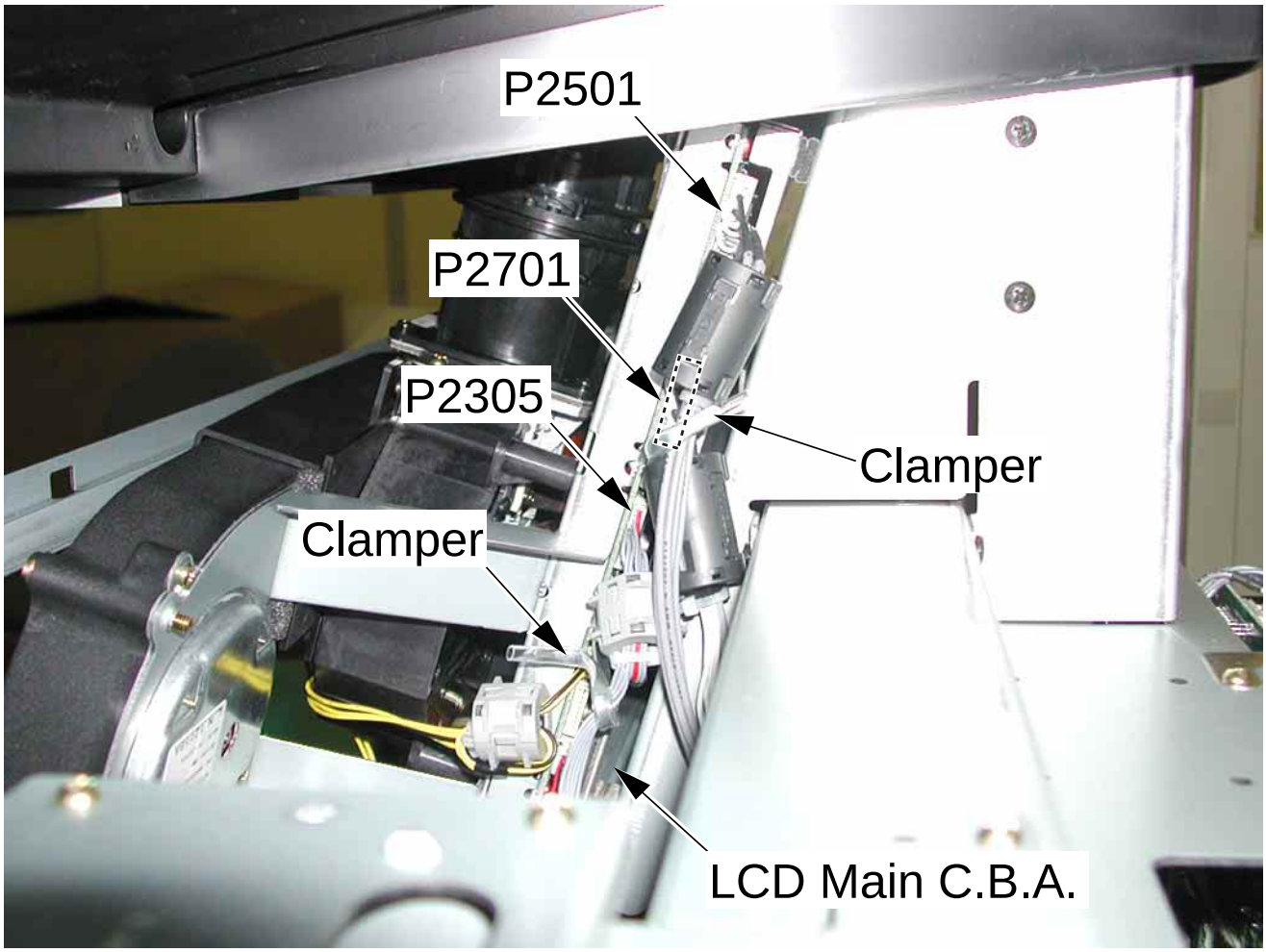


Fig. D1-10

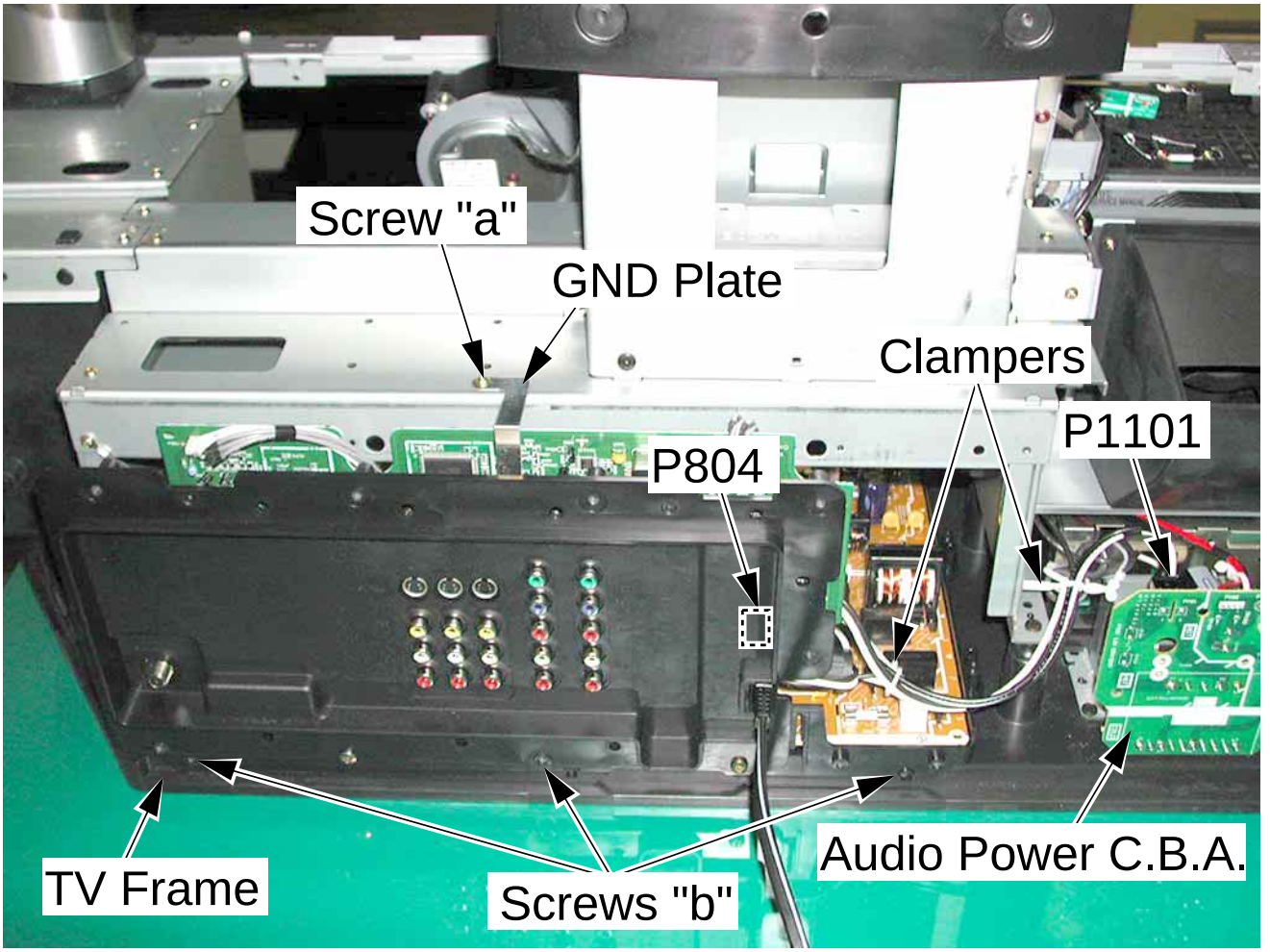
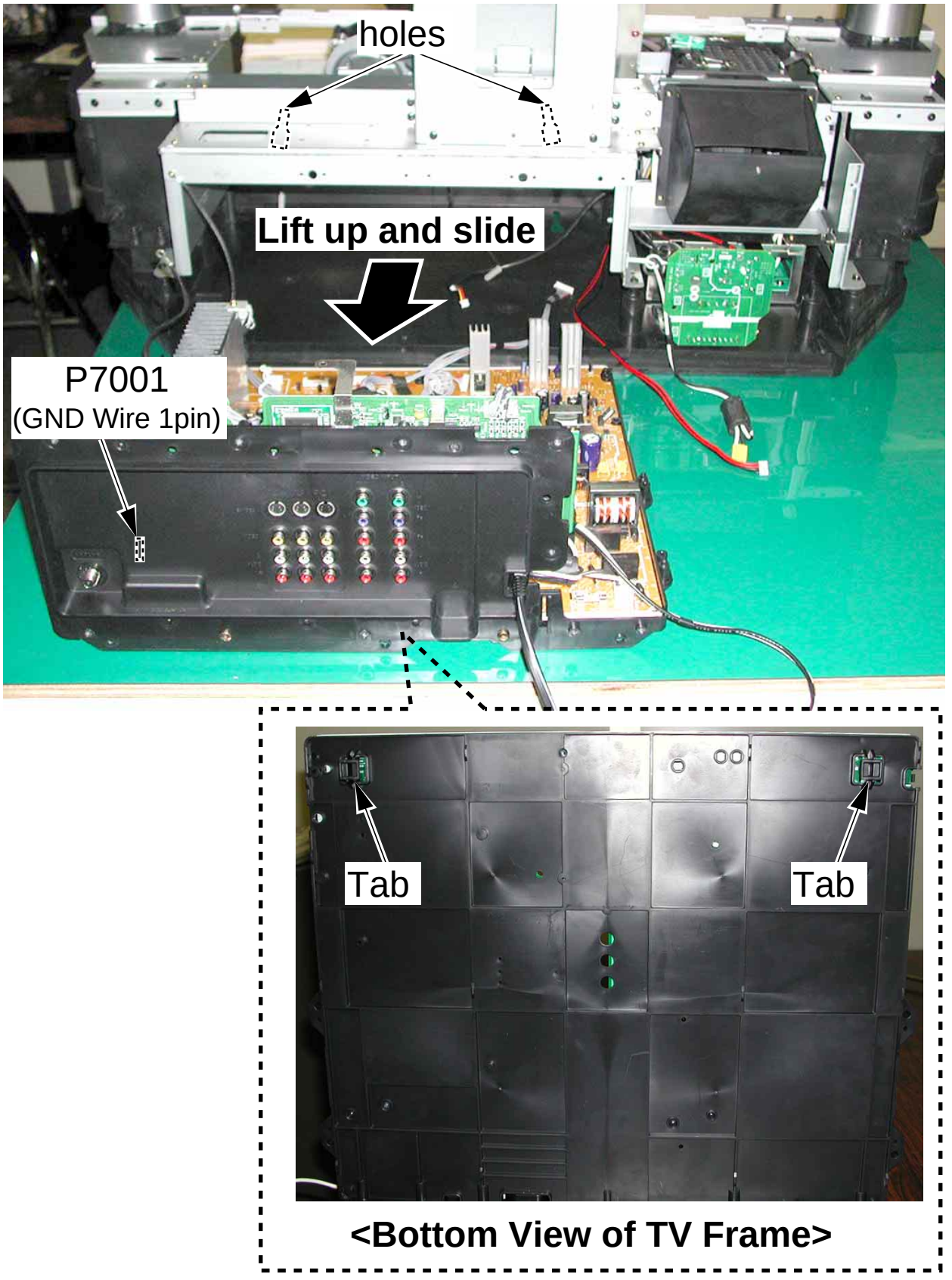
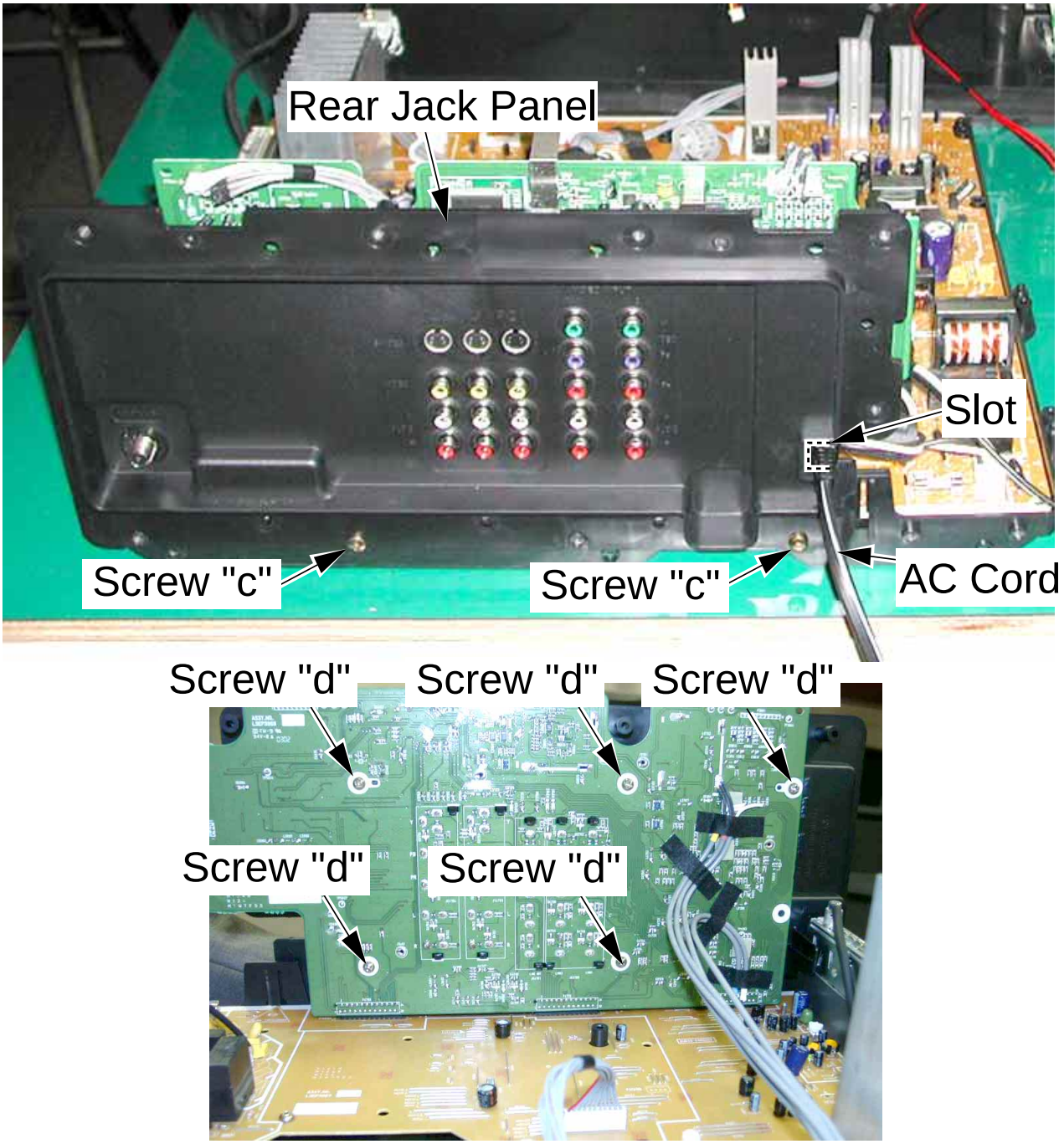

Screw "a"
GND Plate
Clampers
P1101
P804
TV Frame
Screws "b"
Audio Power C.B.A.

Fig. D1-11



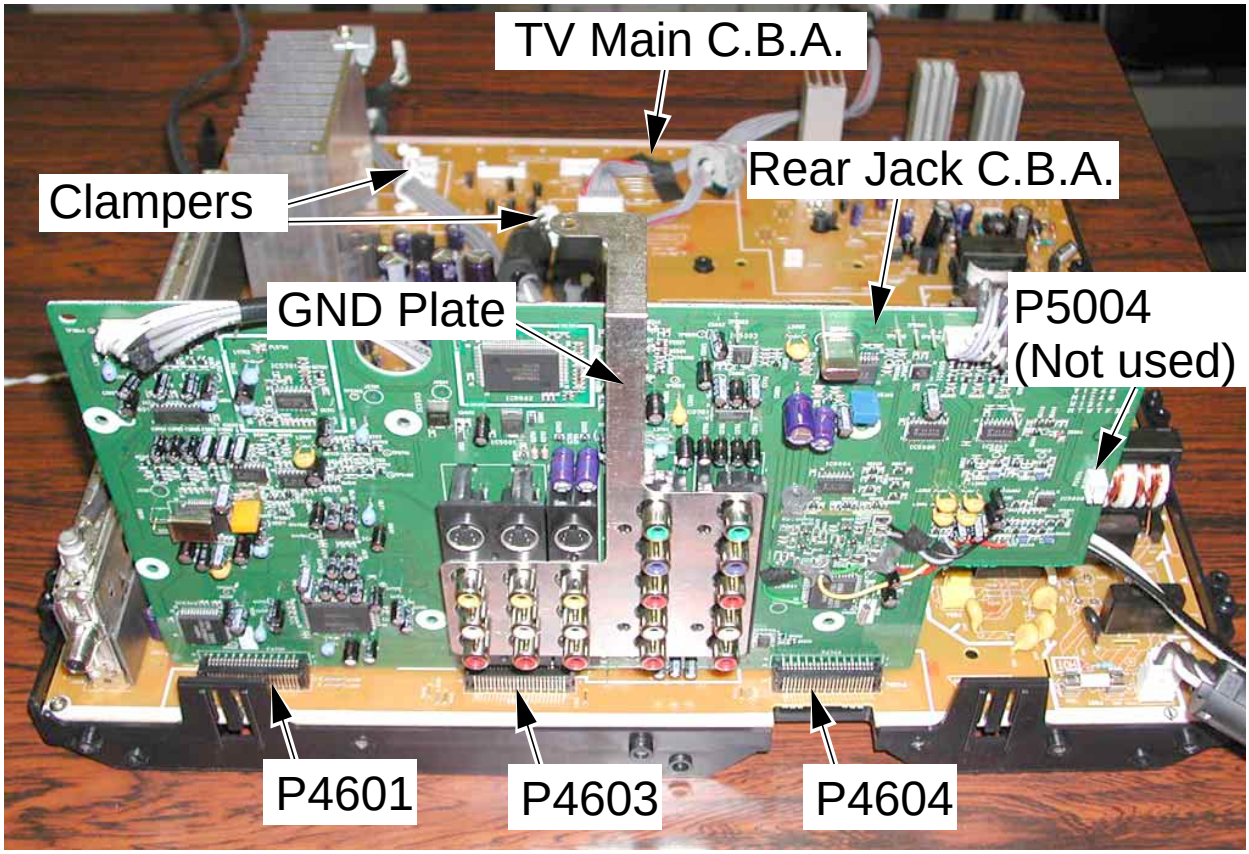
<Bottom View of TV Frame>

Fig. D1-12



<Back of Rear Jack C.B.A.>

Fig. D1-13


TV Main C.B.A.
Clampers
Rear Jack C.B.A.
GND Plate
P5004
(Not used)
P4601
P4603
P4604

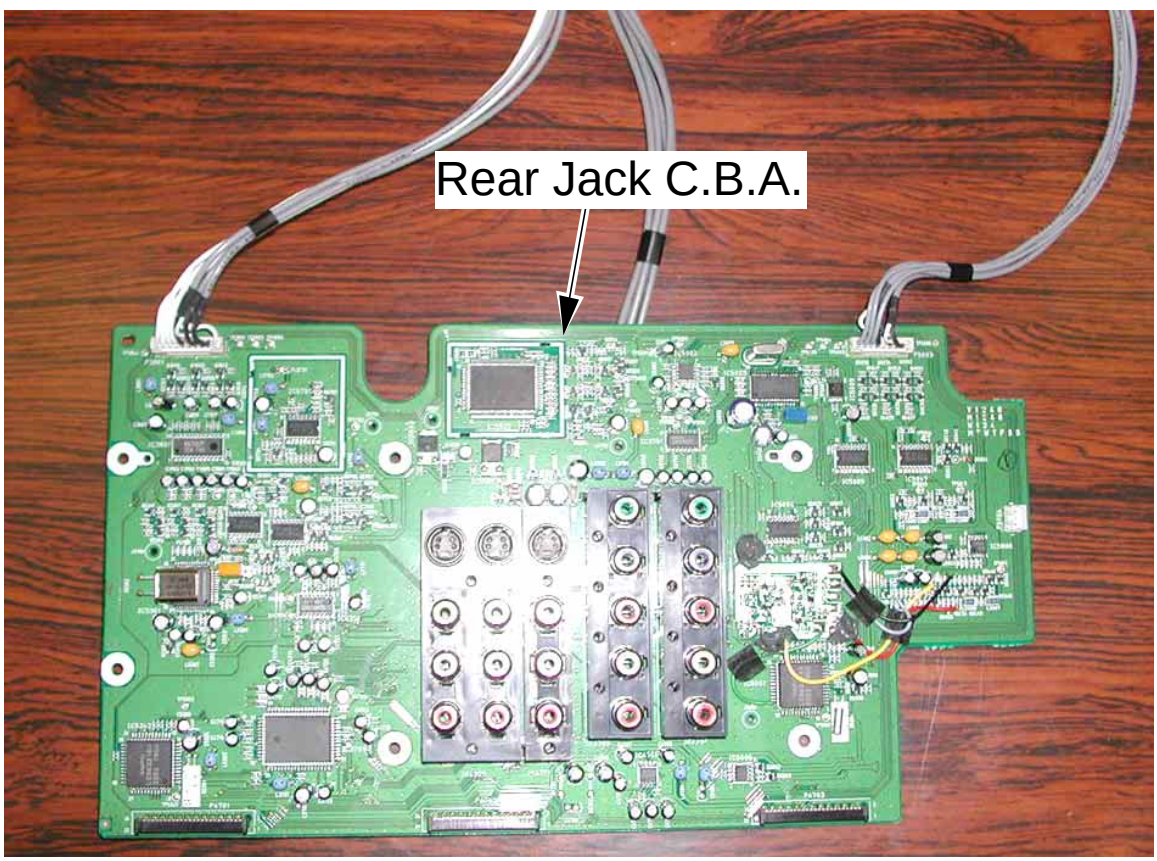

Rear Jack C.B.A.

Fig. D1-14

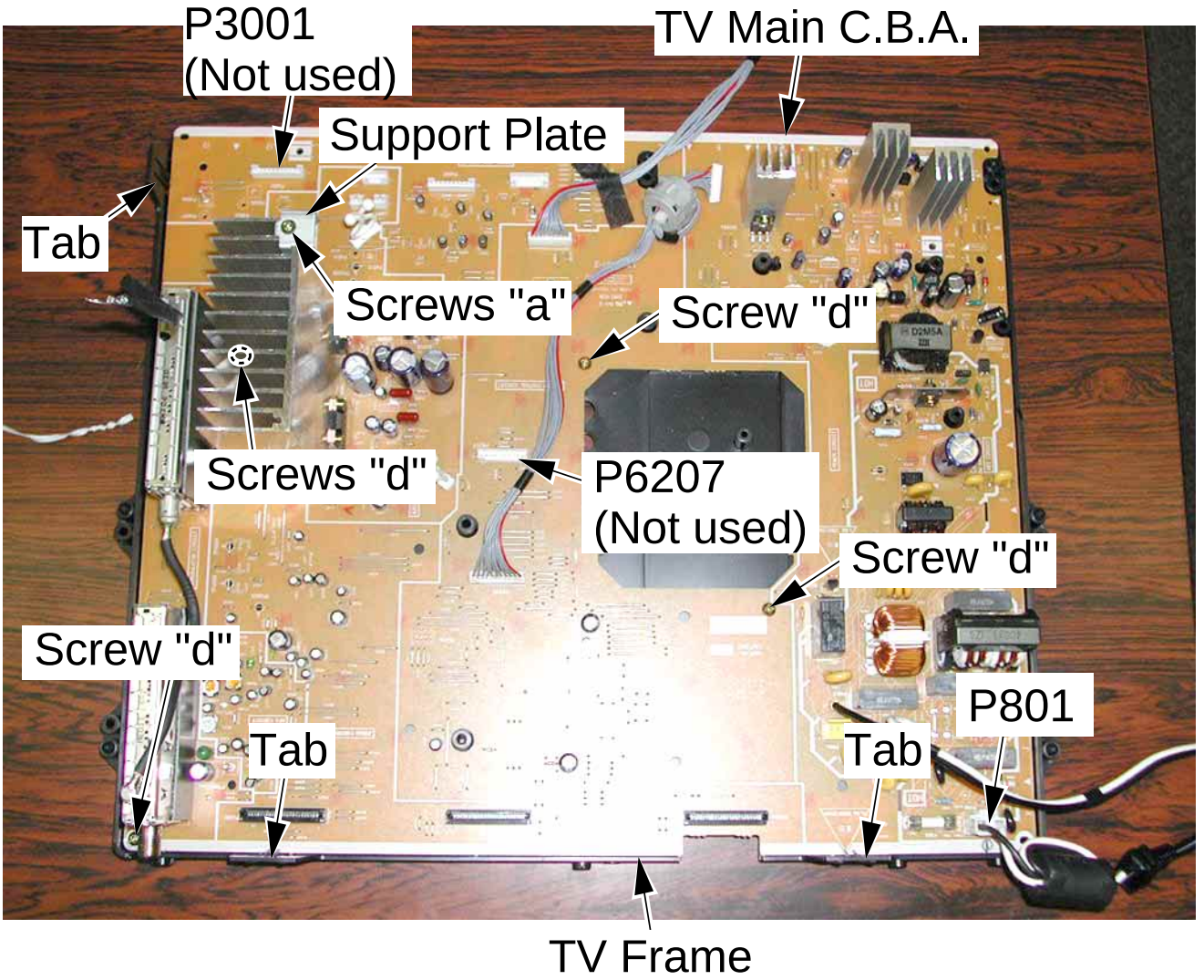

P3001
(Not used)
TV Main C.B.A.
Support Plate
Tab
Screws "a"
Screw "d"
Screws "d"
P6207
(Not used)
Screw "d"
Screw "d"
P801
Tab
Tab
TV Frame

Fig. D1-15

TV Main C.B.A.

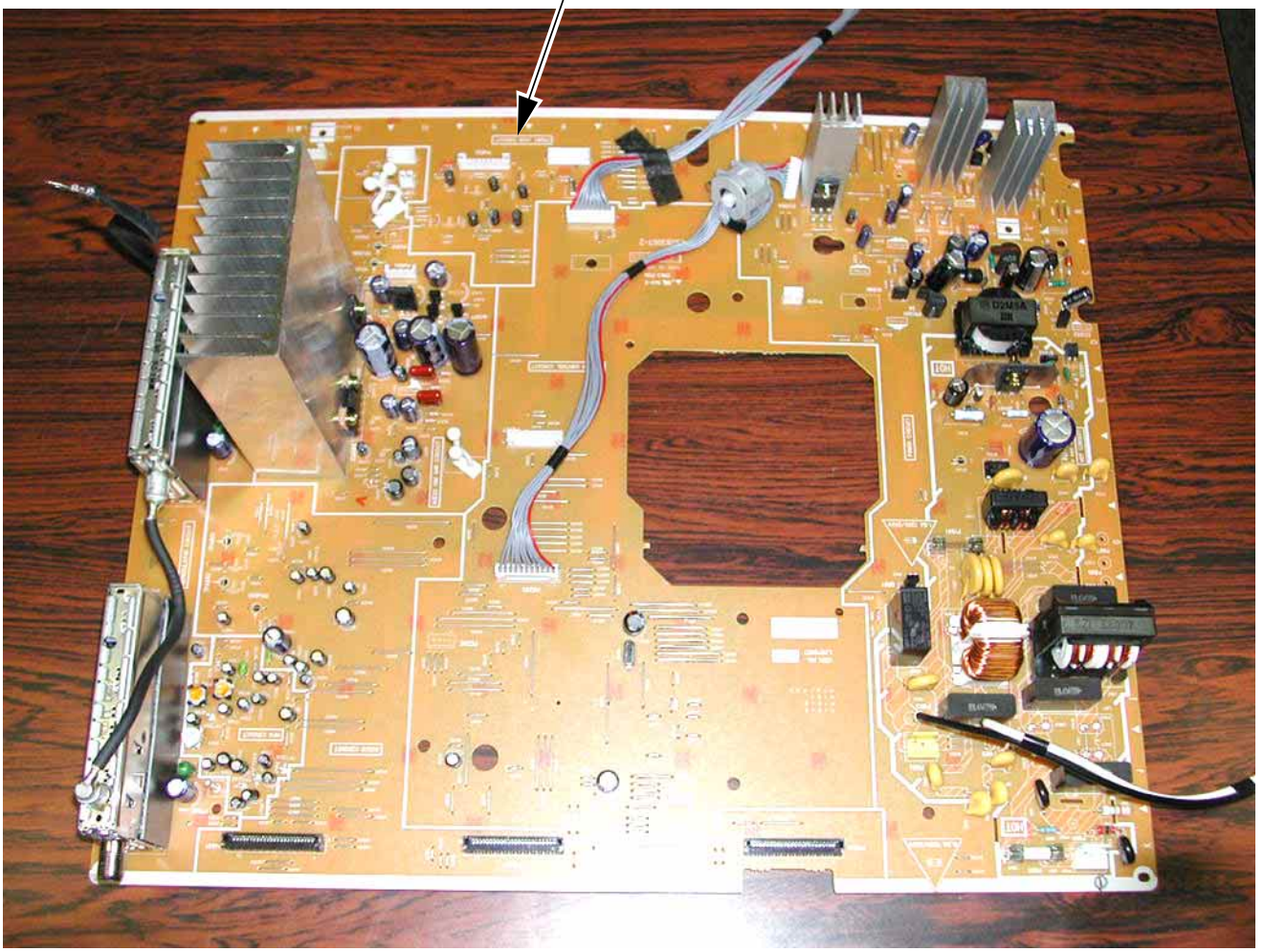
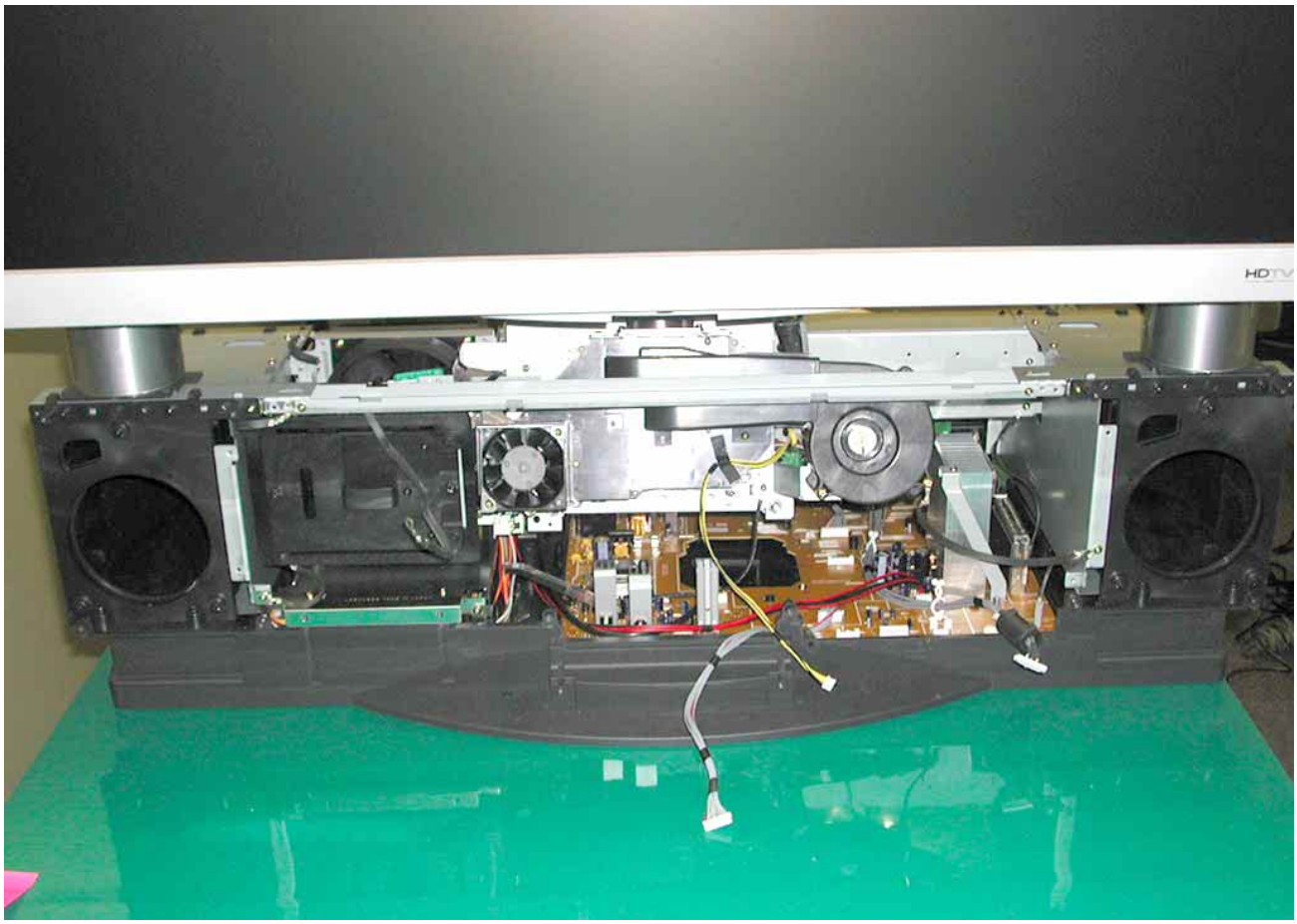


Fig. D1-16

After removing the Base Front Panel Unit



<Front View>

Fig. D2-1

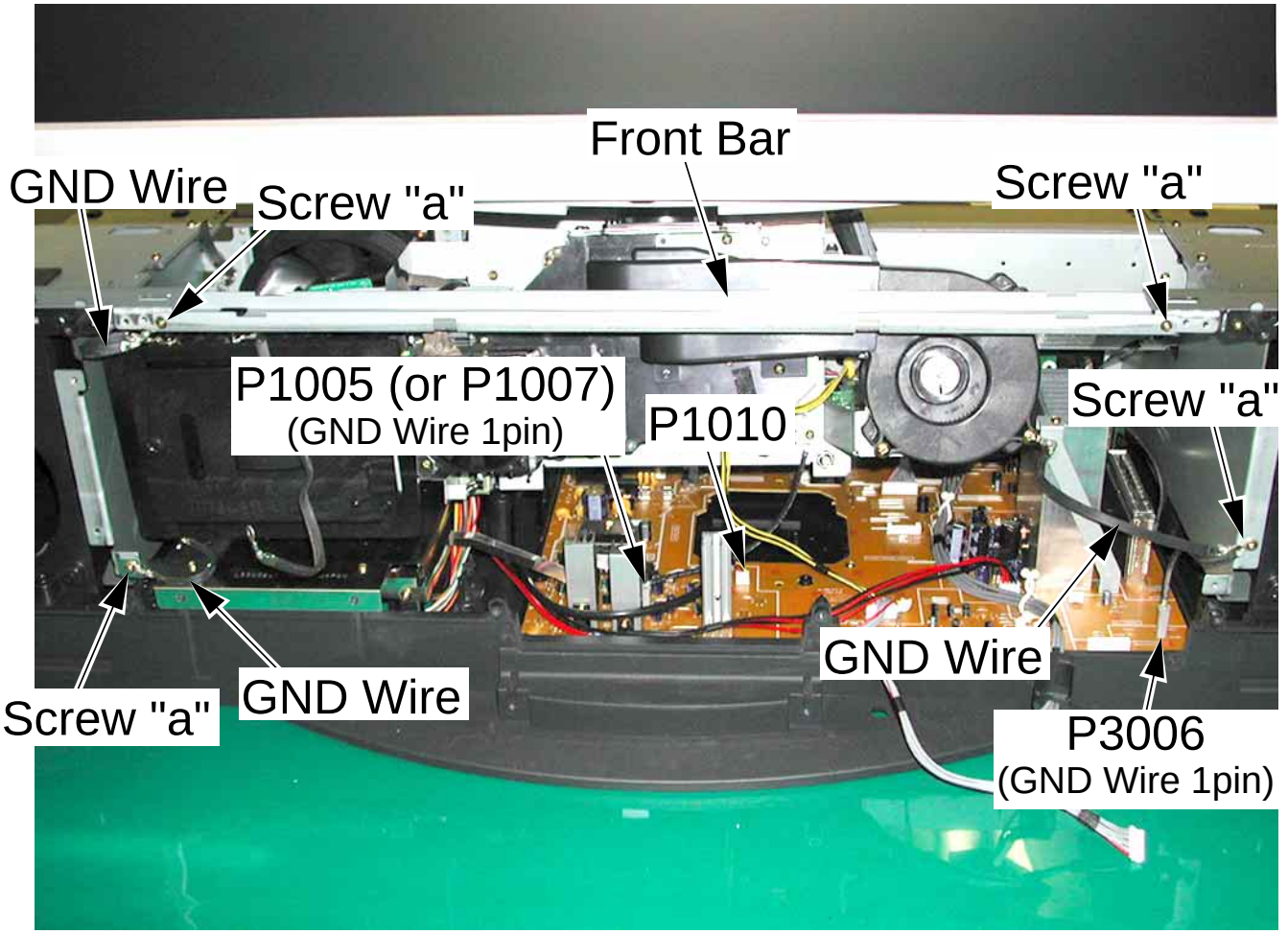

Front Bar
GND Wire
Screw "a"
Screw "a"
P1005 (or P1007)
(GND Wire 1pin)
P1010
Screw "a"
Screw "a"
GND Wire
GND Wire
P3006
(GND Wire 1pin)

Fig. D2-2

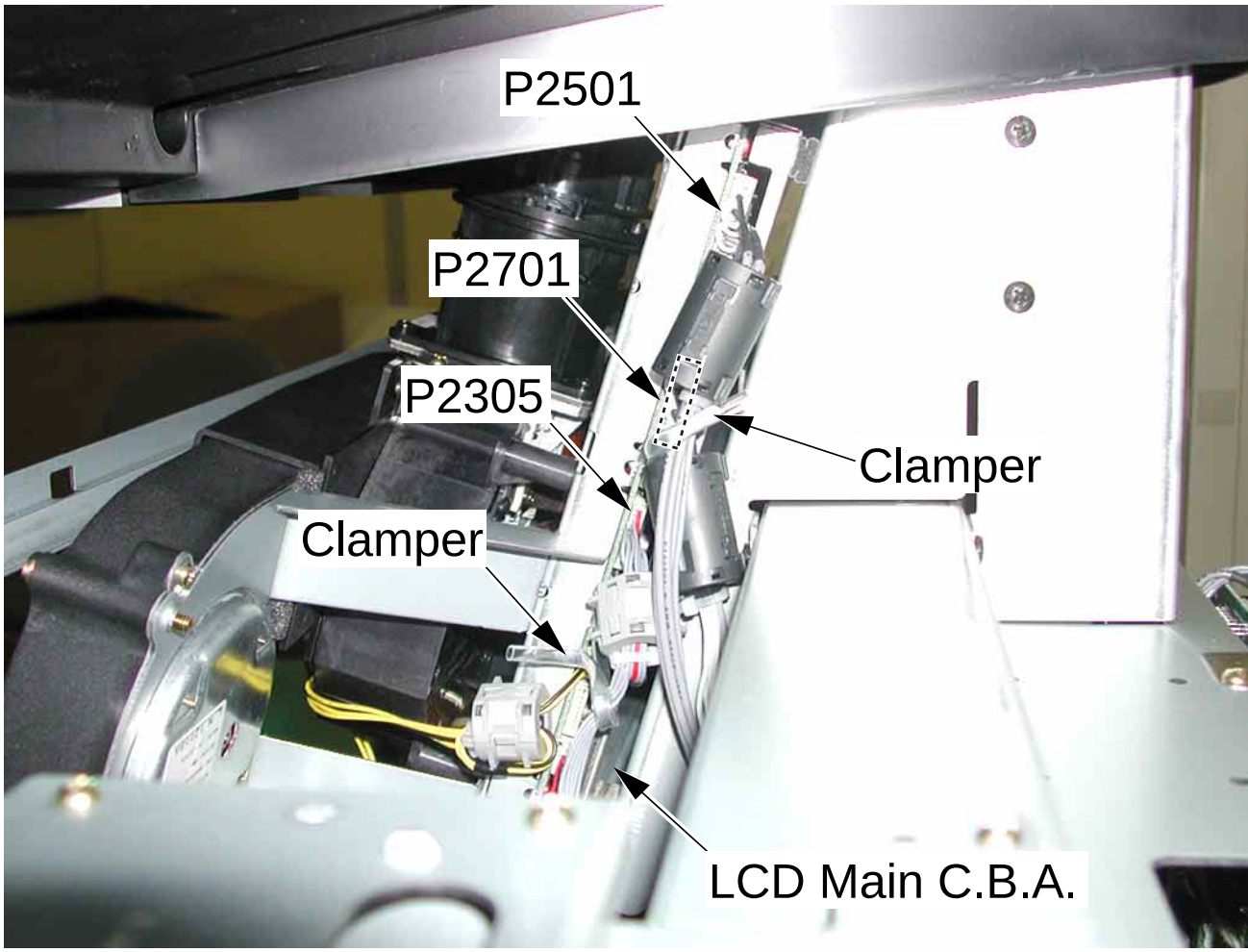


Fig. D2-3

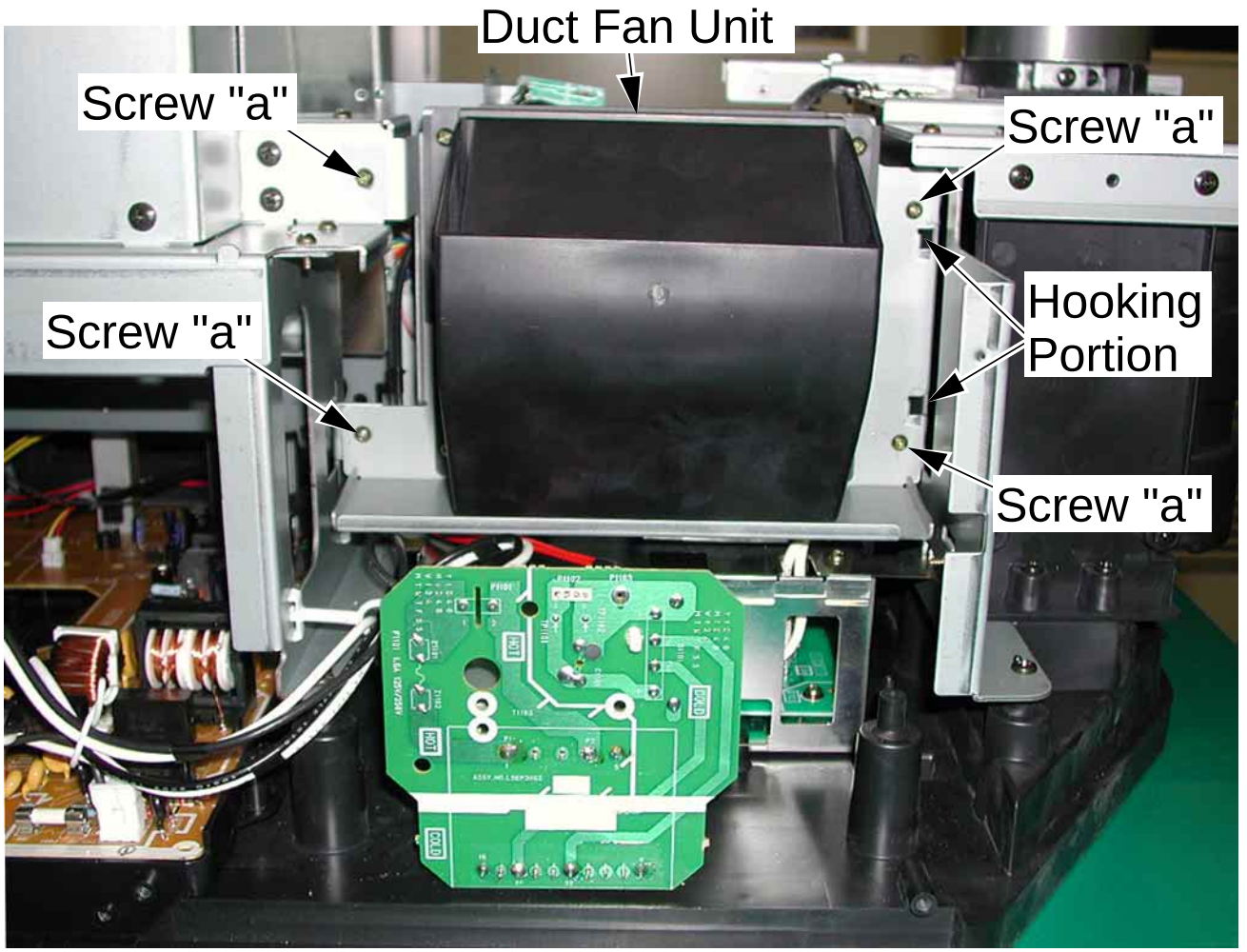


Fig. D2-4

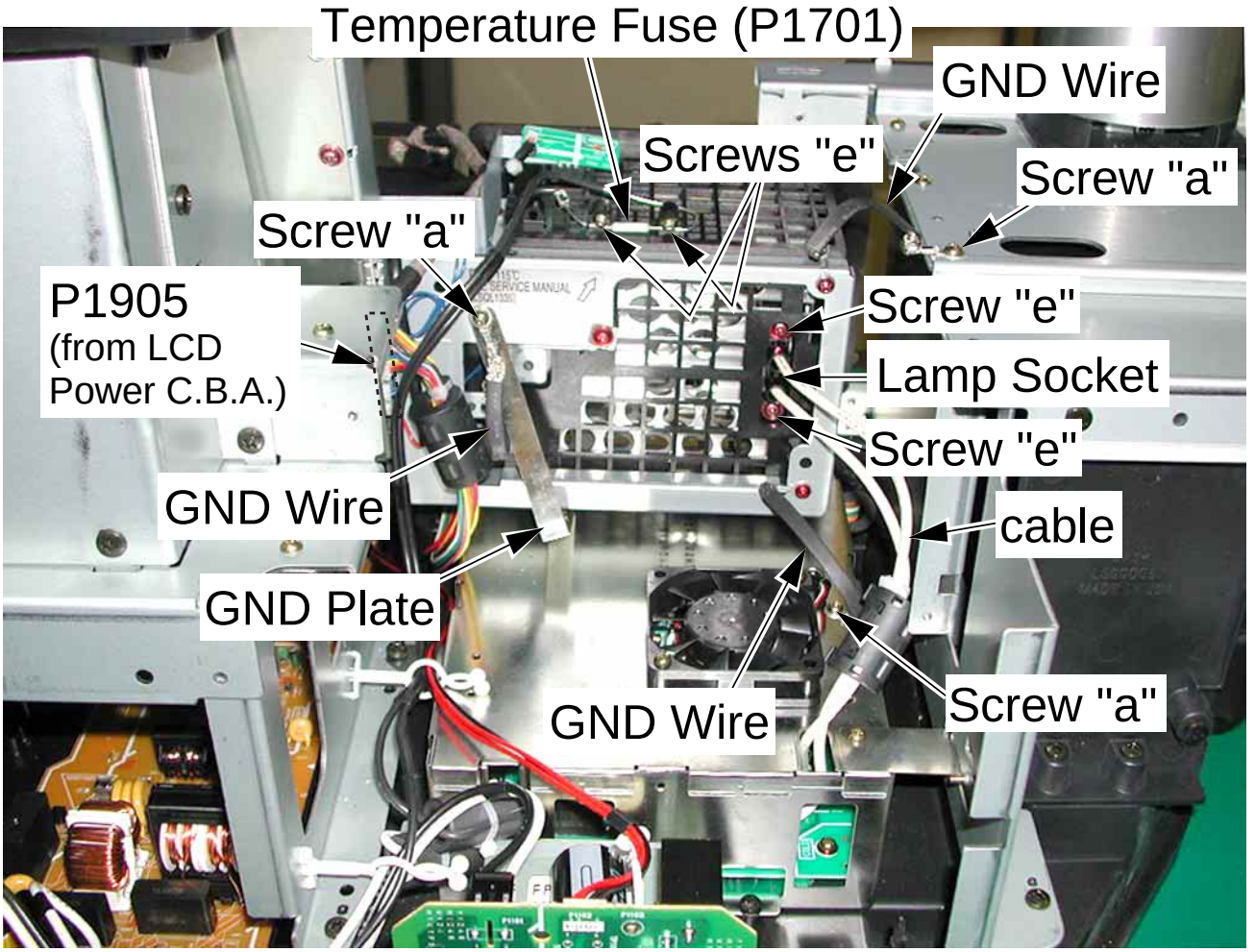
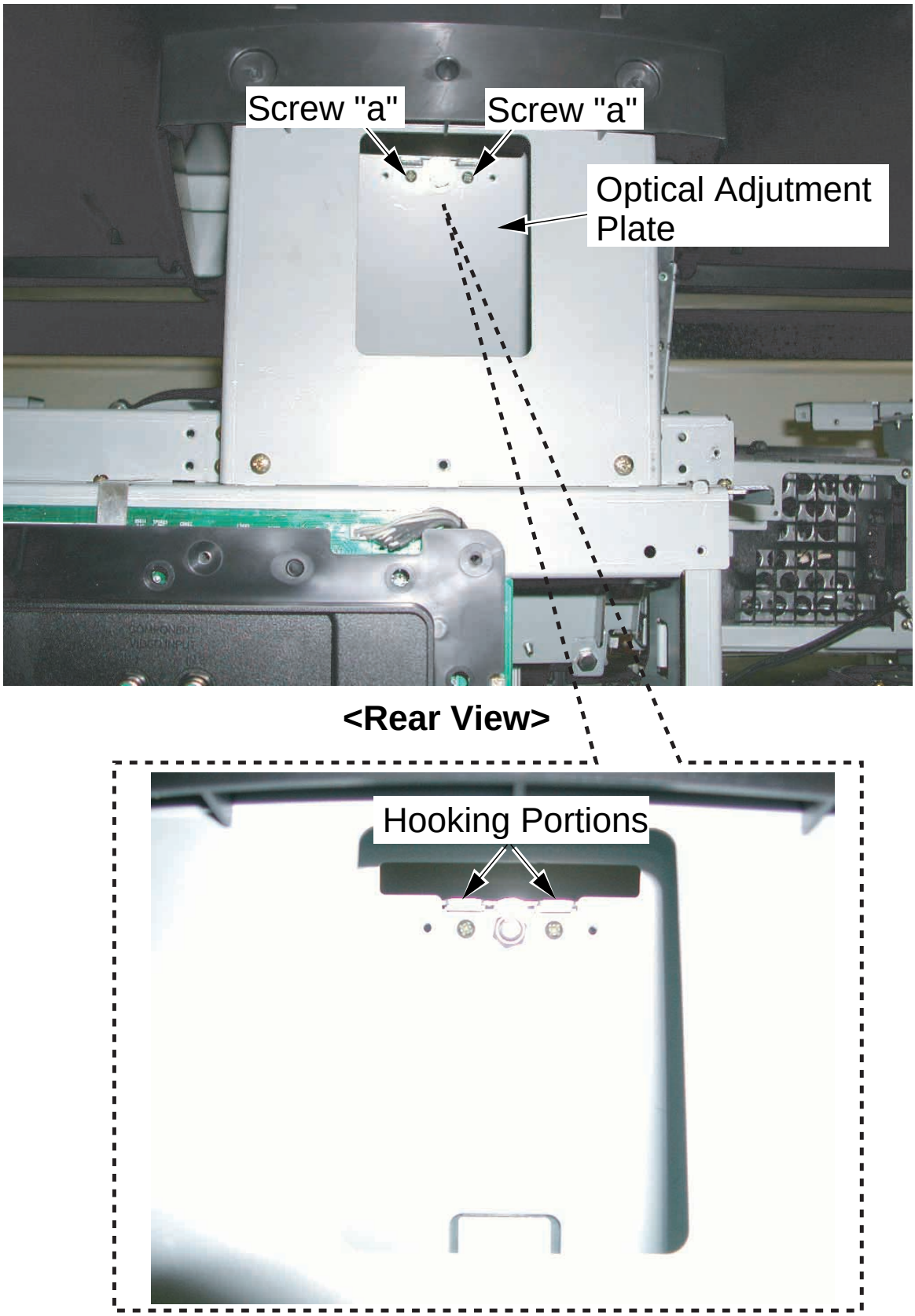
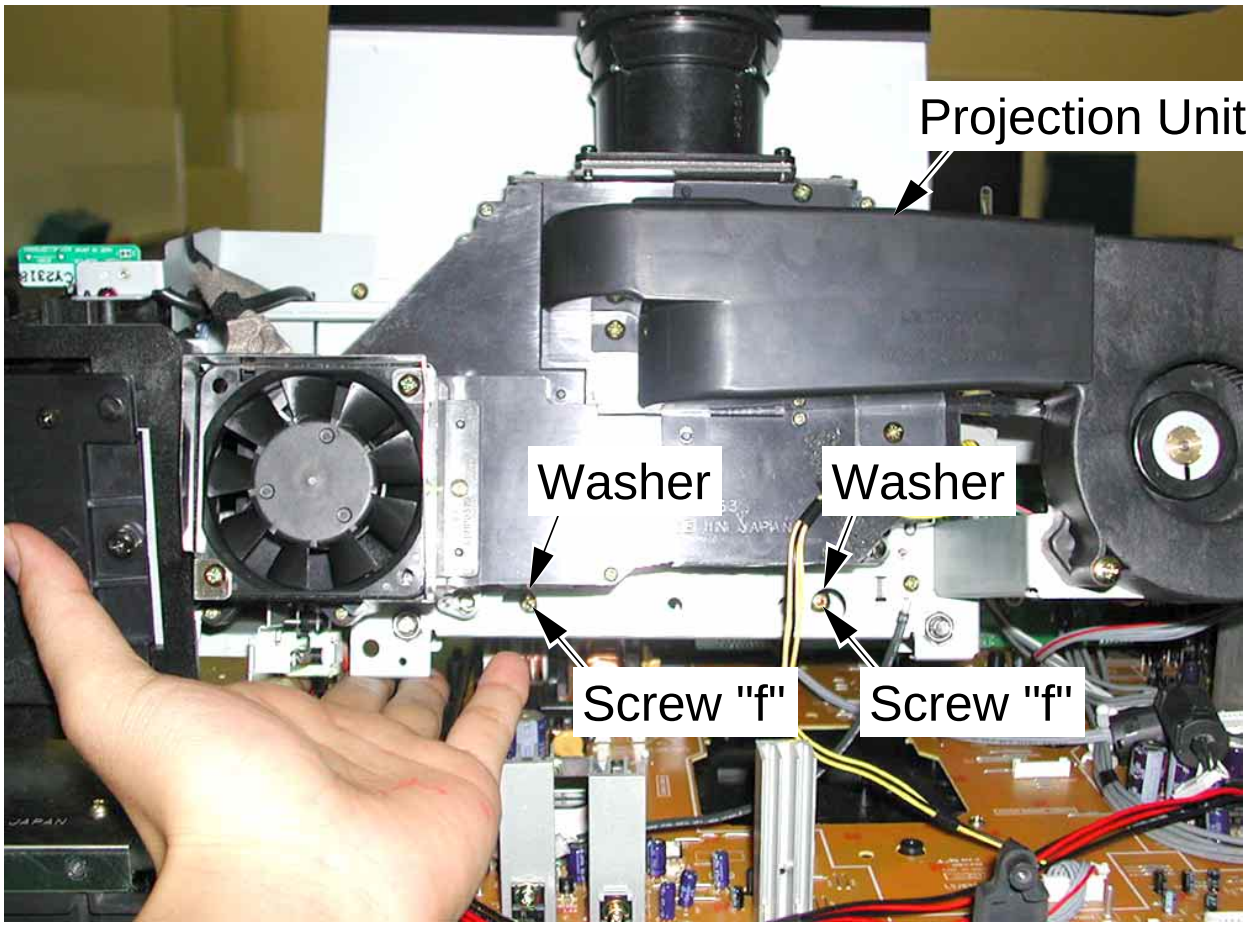

Temperature Fuse (P1701)
GND Wire
Screws "e"
Screw "a"
Screw "a"
P1905
(from LCD
Power C.B.A.)
Screw "e"
Lamp Socket
Screw "e"
GND Wire
cable
GND Plate
GND Wire
Screw "a"

Fig. D2-5



<Rear View>

Fig. D2-6



<Front View>

Fig. D2-7

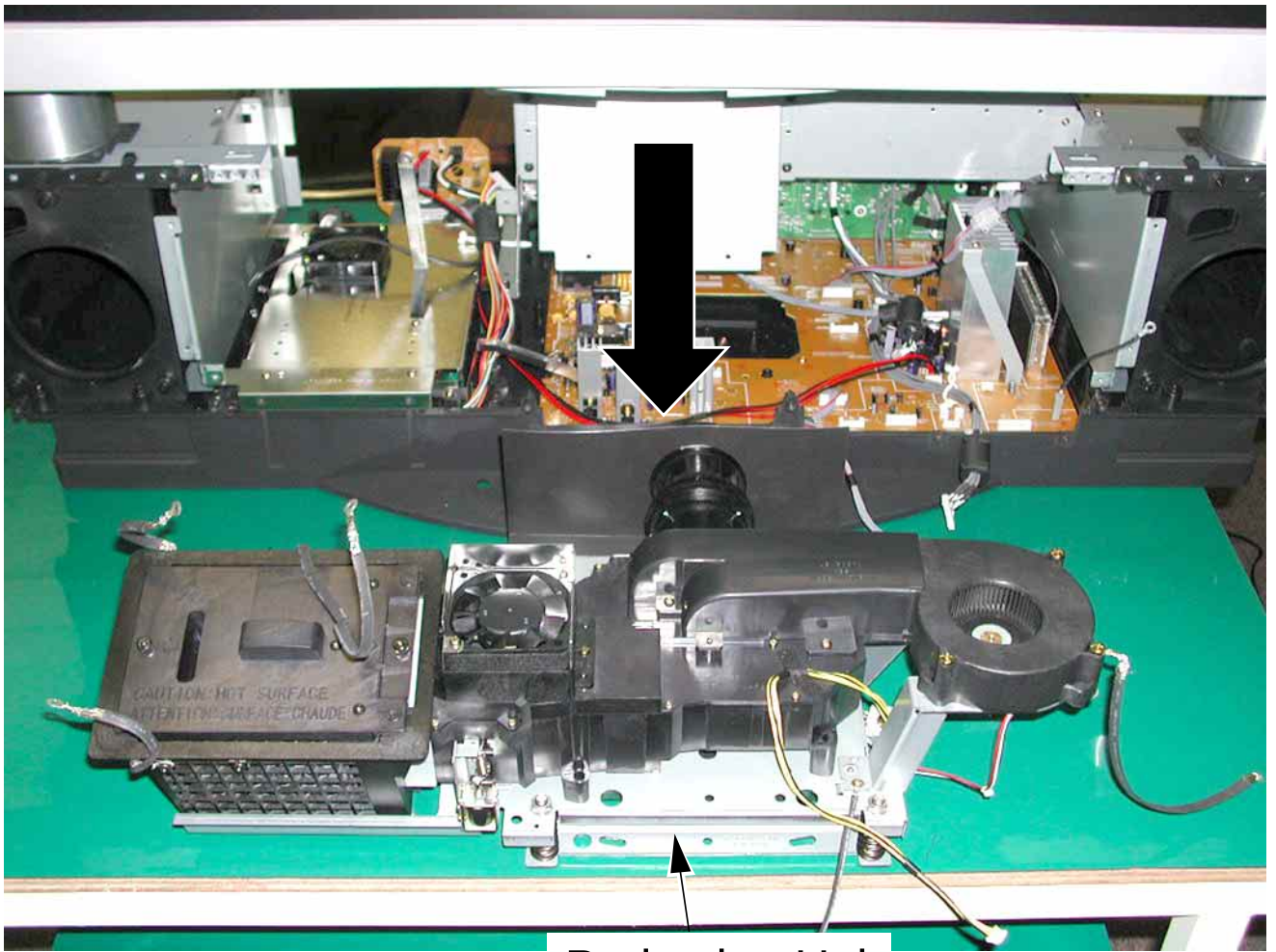

CAUTION: HOT SURFACE
ATTENTION: SURFACE CHAUDE
Projection Unit

Fig. D2-8

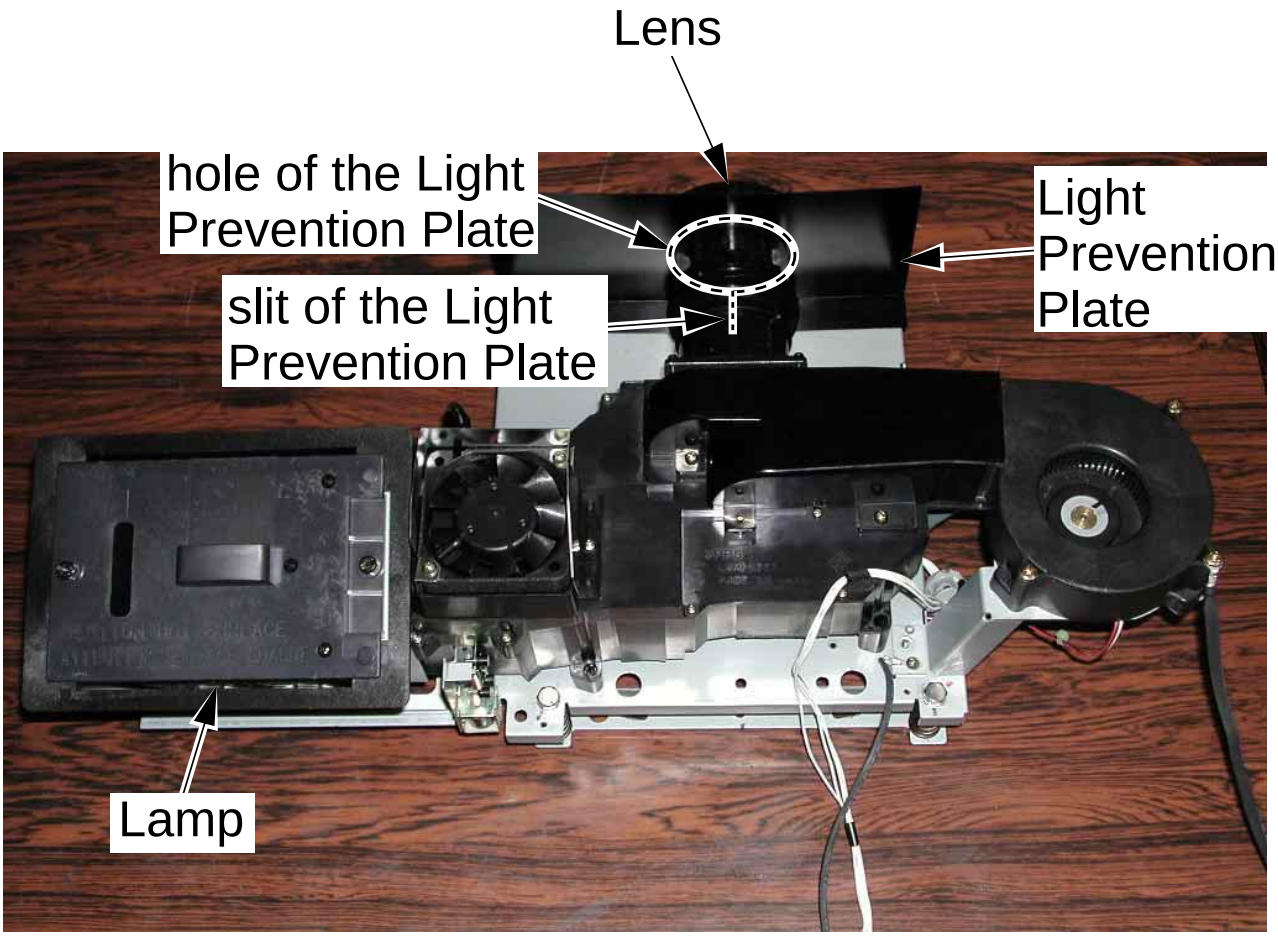

Lens
hole of the Light Prevention Plate
Light Prevention Plate
slit of the Light Prevention Plate
Lamp

Fig. D2-9

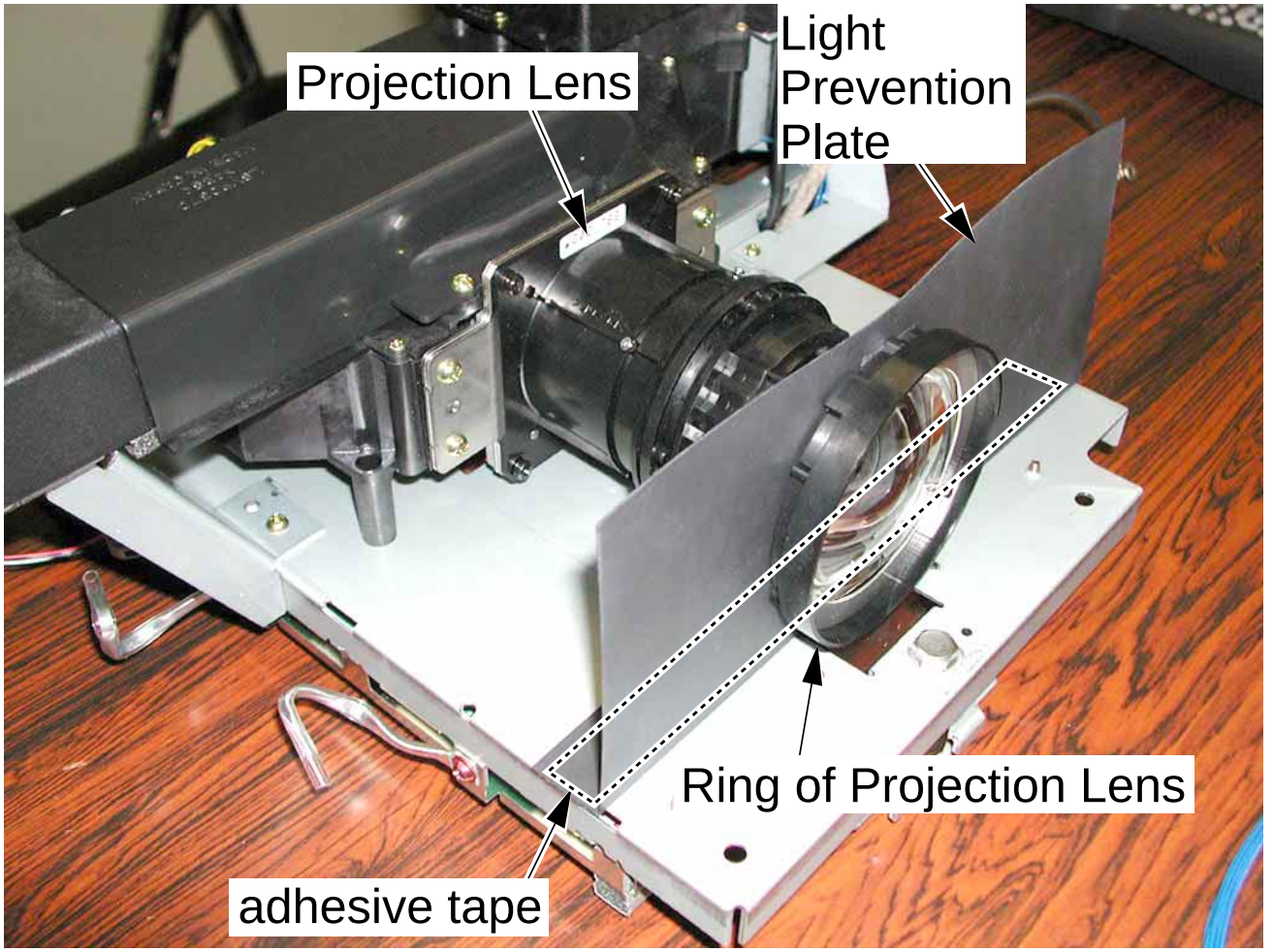
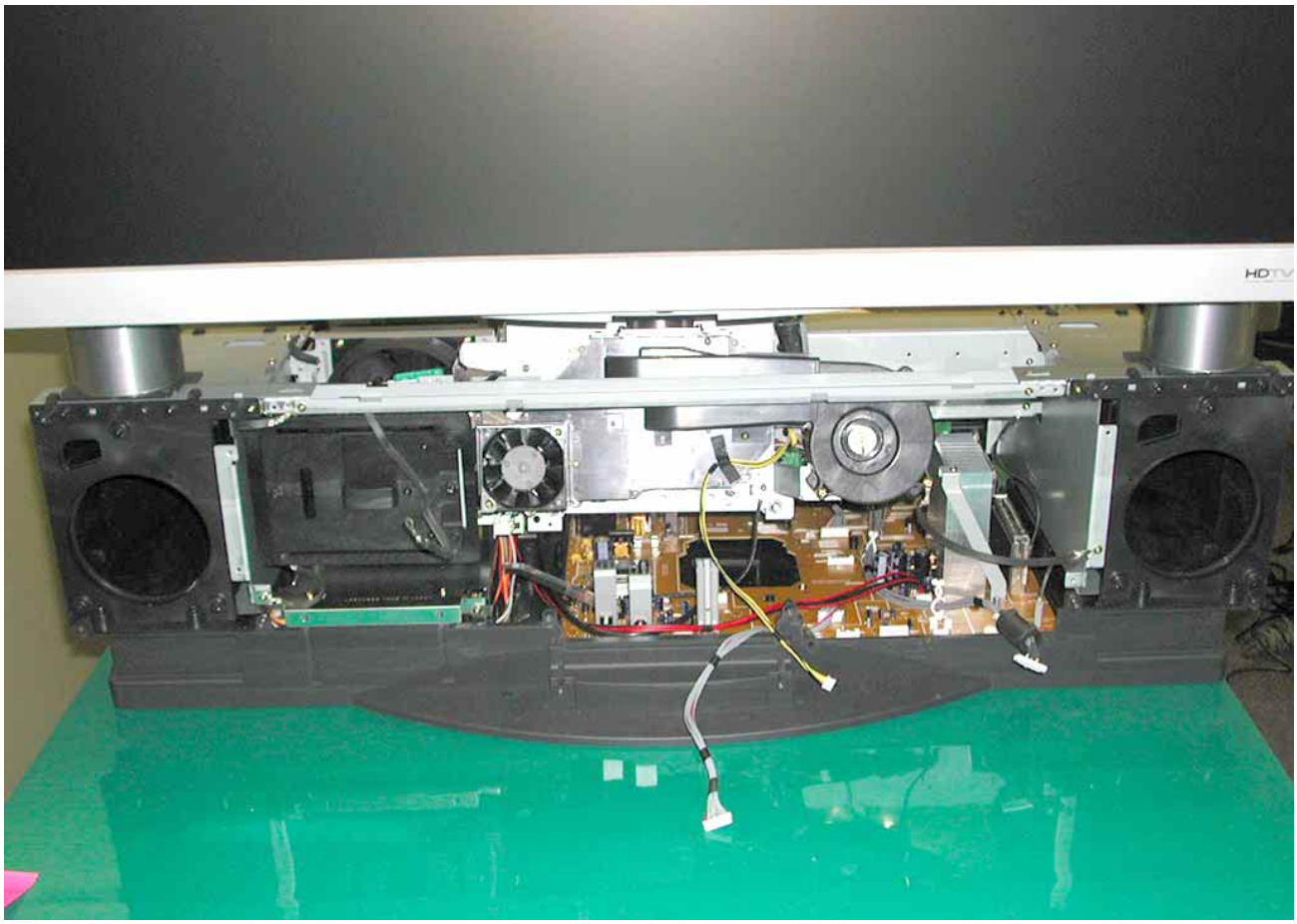

Projection Lens
Light Prevention Plate
Ring of Projection Lens
adhesive tape

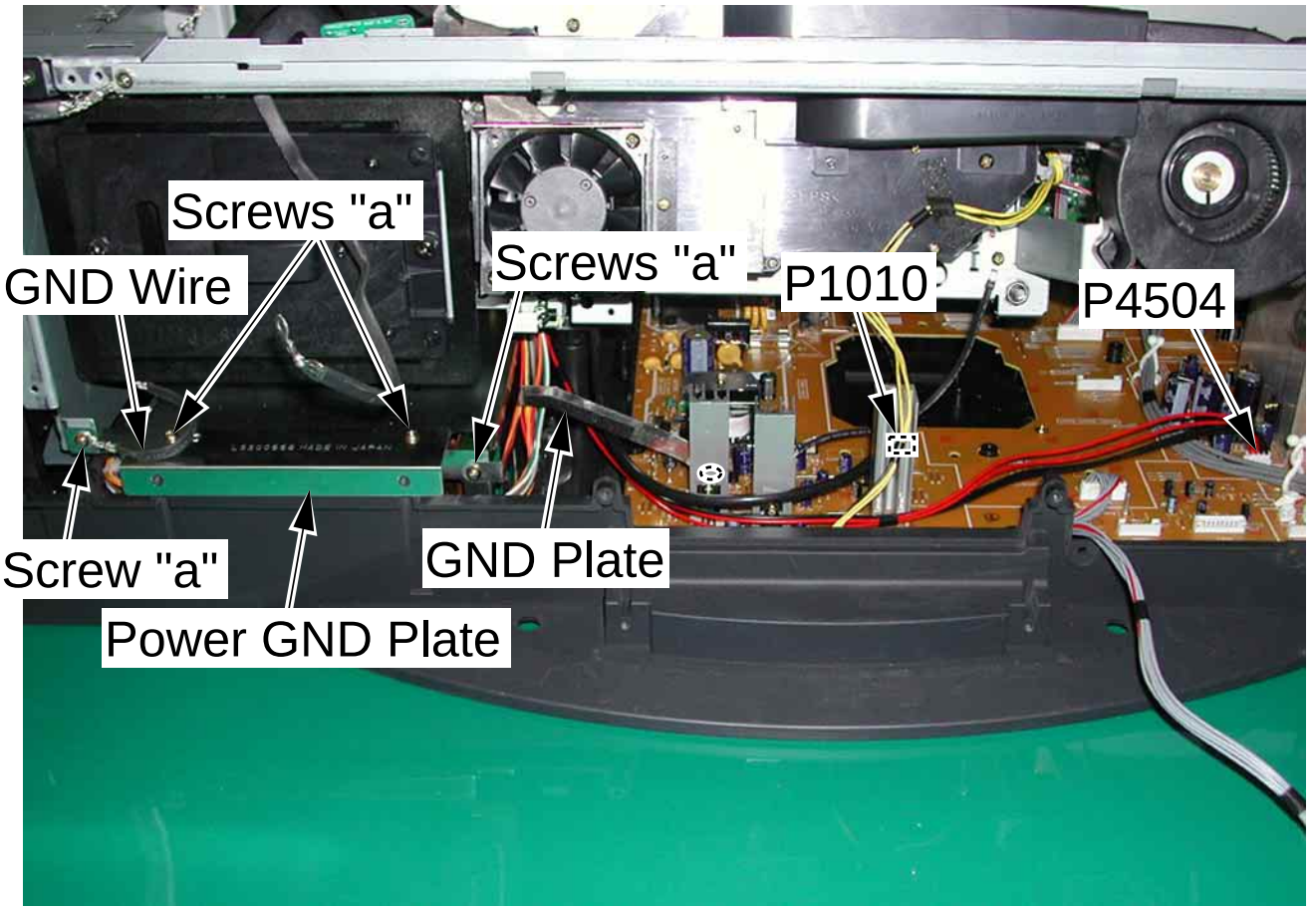
Fig. D2-10

After removing the Base Front Panel Unit



<Front View>

Fig. D3-1



<Front View>

Fig. D3-2

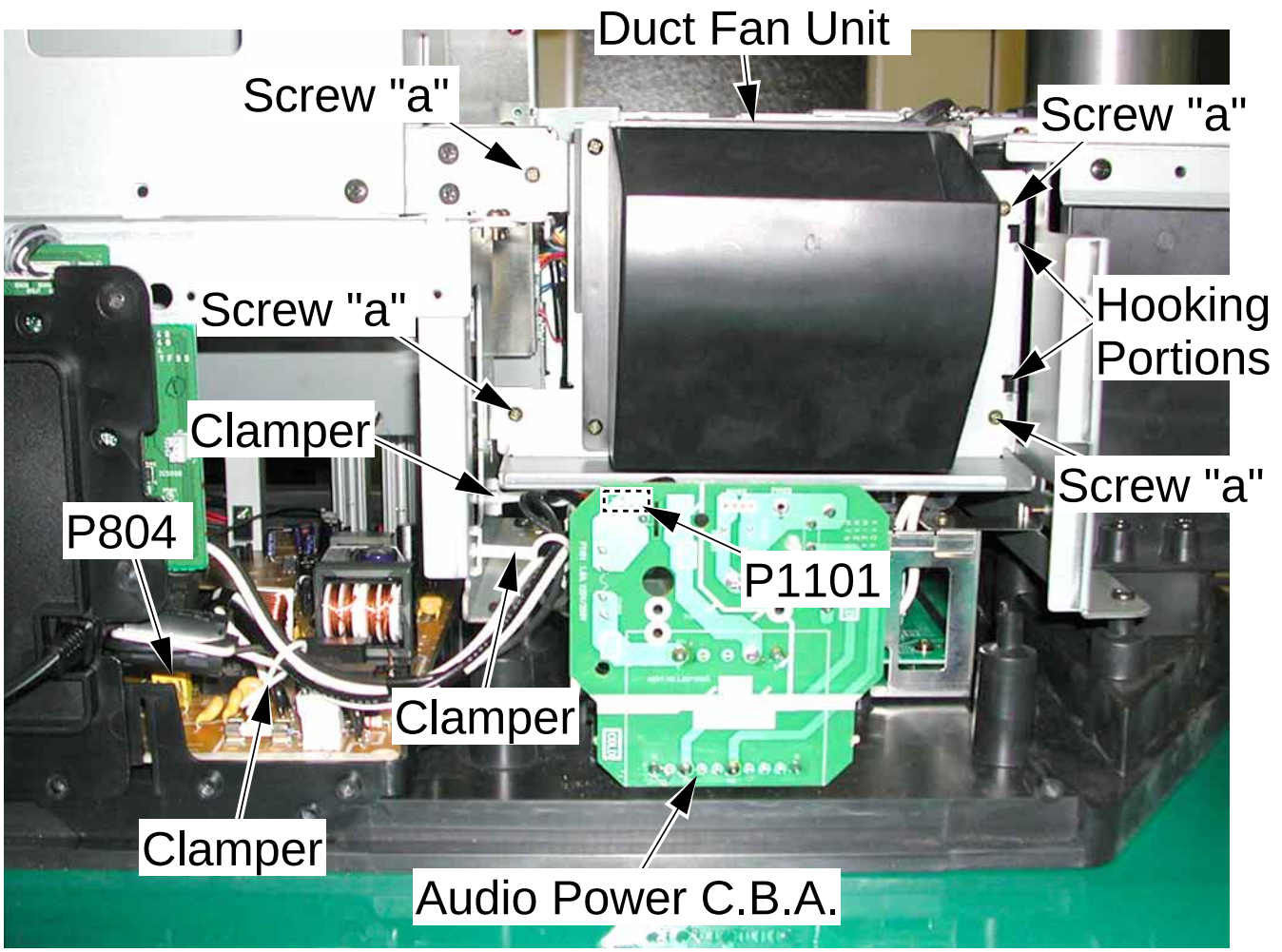
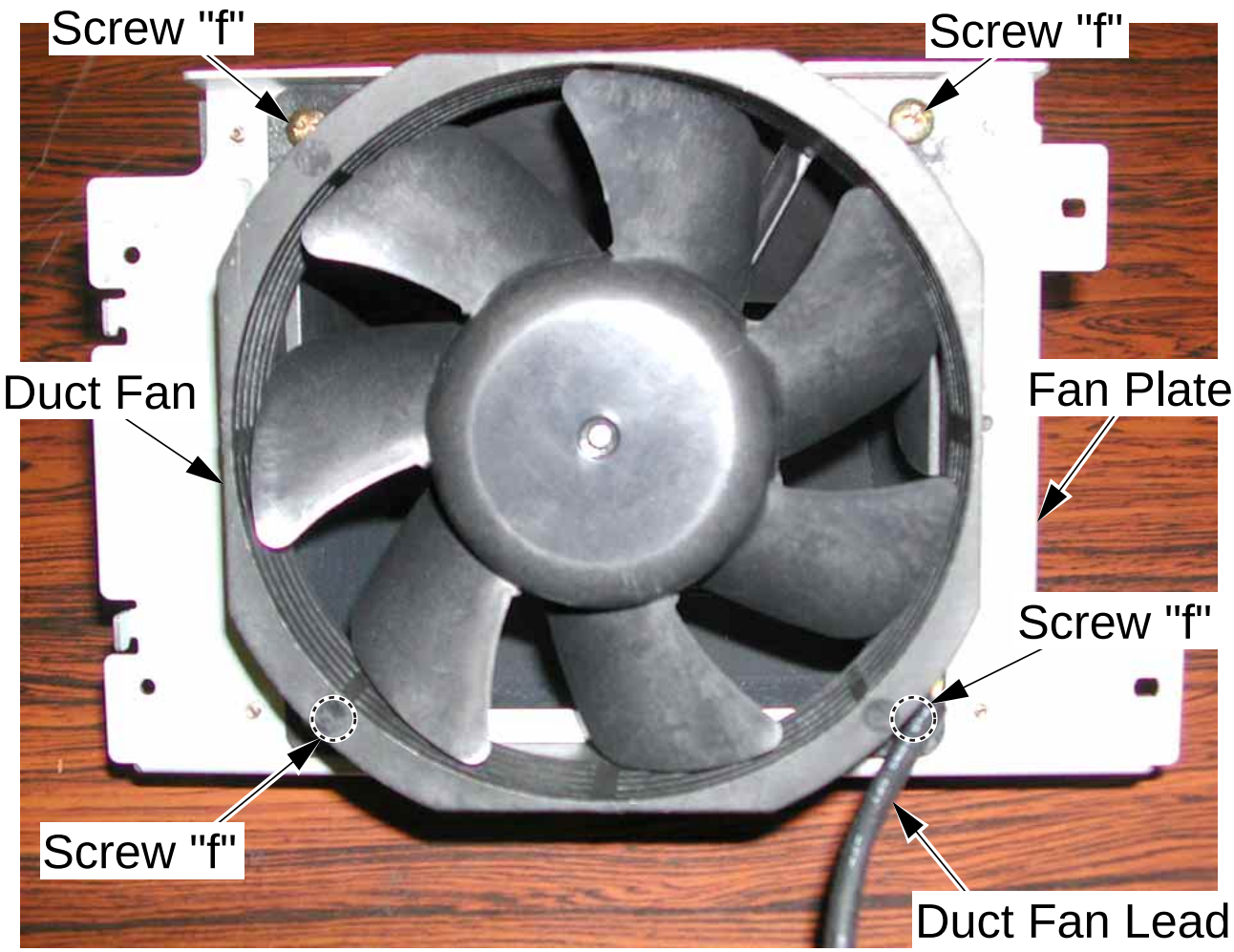

Duct Fan Unit
Screw "a"
Screw "a"
Screw "a"
Hooking
Portions
Clamper
Screw "a"
P804
P1101
Clamper
Clamper
Audio Power C.B.A.

Fig. D3-3-1



<Front View>

Fig. D3-3-2

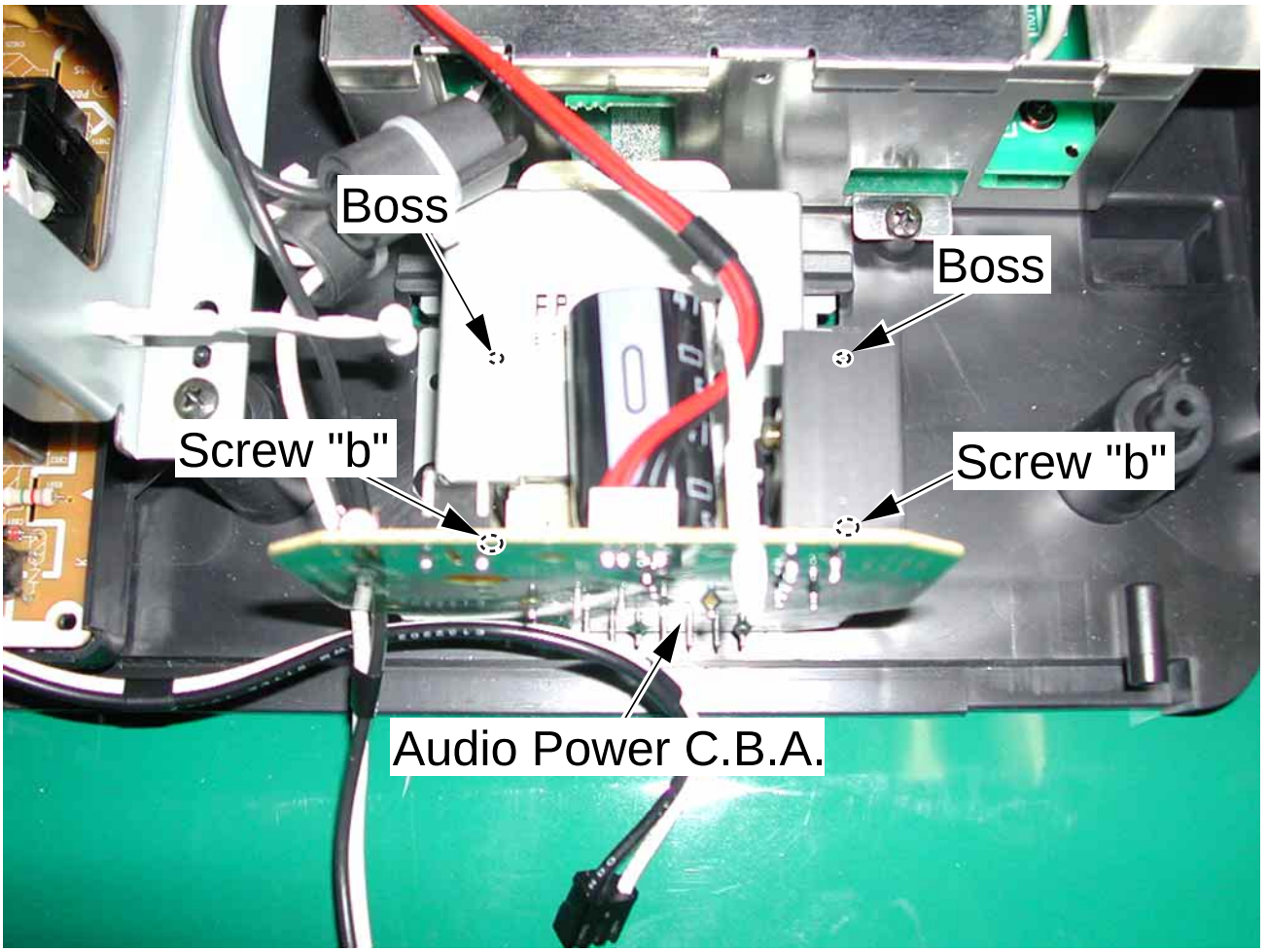


Fig. D3-4

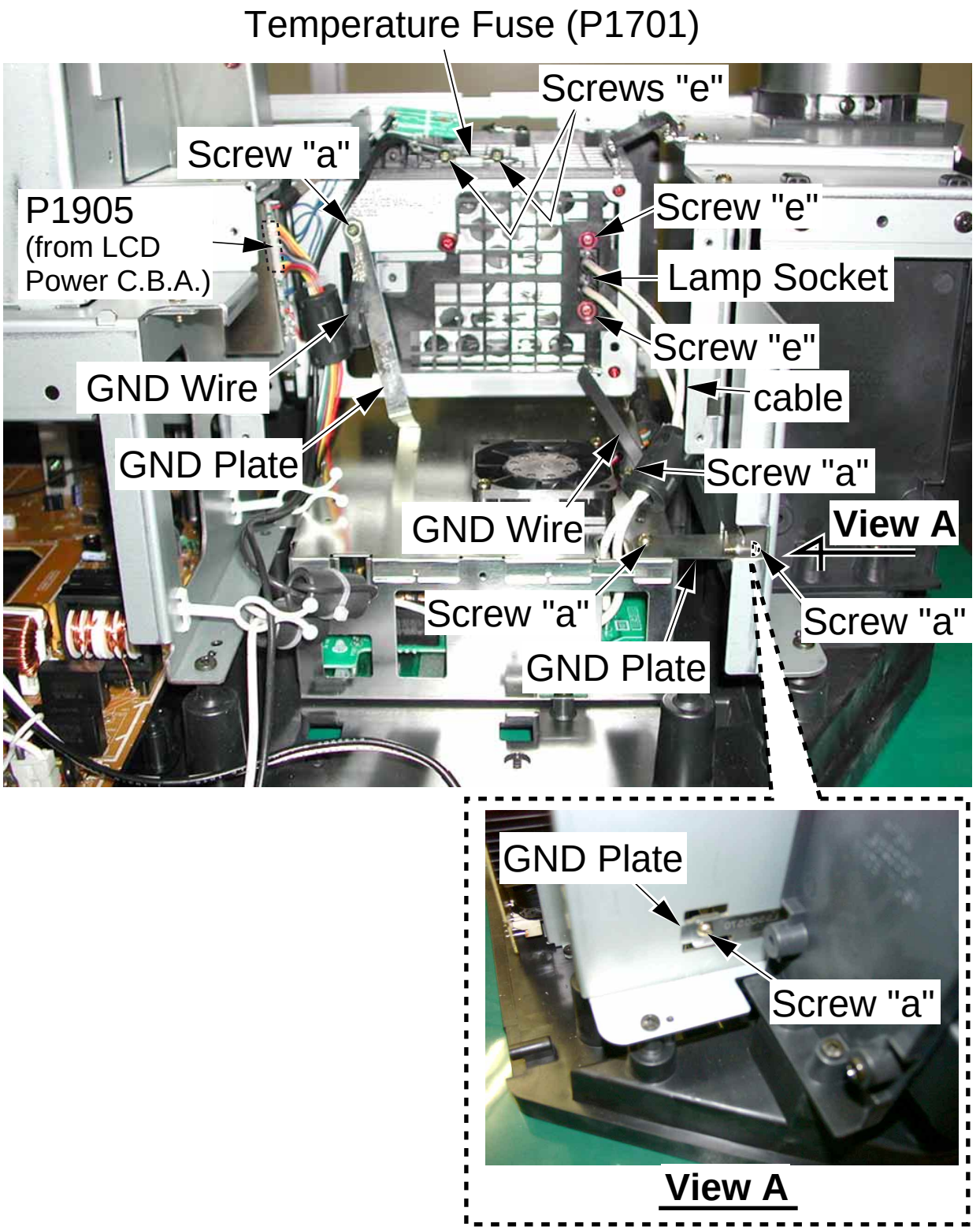

Temperature Fuse (P1701)
Screws "e"
Screw "a"
P1905
(from LCD
Power C.B.A.)
Screw "e"
Lamp Socket
Screw "e"
GND Wire
cable
GND Plate
Screw "a"
GND Wire
View A
Screw "a"
Screw "a"
GND Plate
GND Plate
Screw "a"
View A

Fig. D3-5

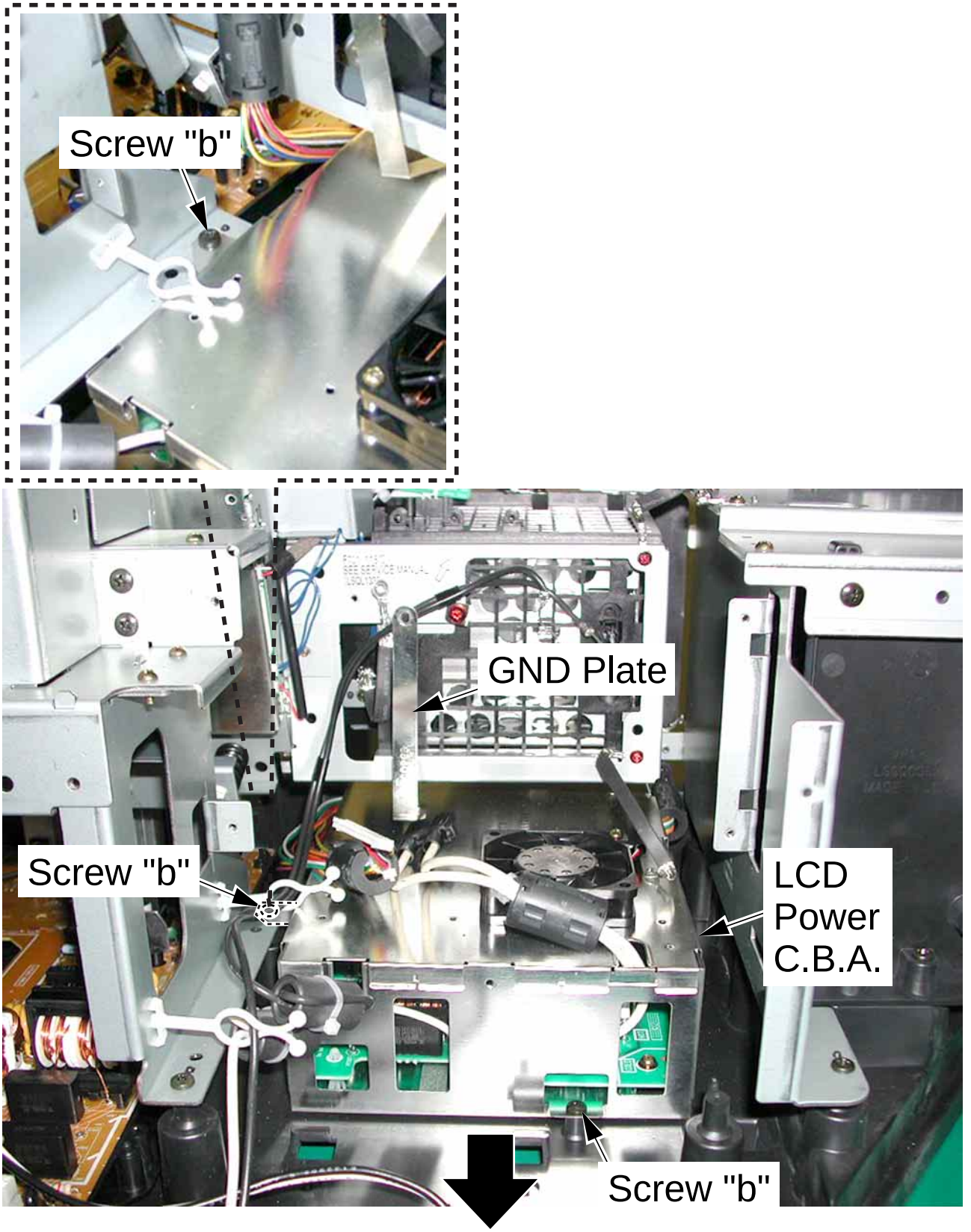
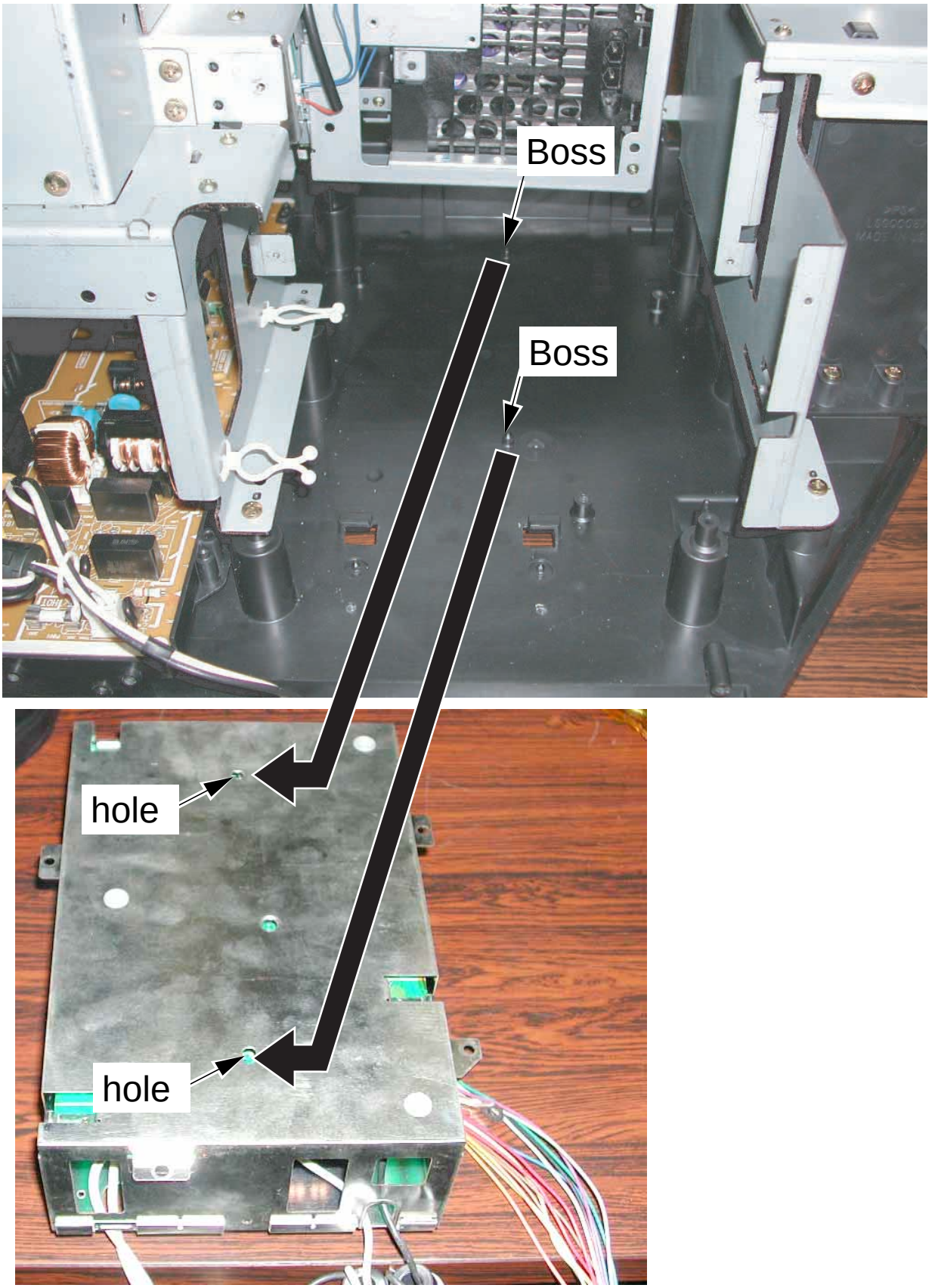

Screw "b"
GND Plate
Screw "b"
LCD
Power
C.B.A.
Screw "b"
Lift up and slide

Fig. D3-6-1



<Bottom View of LCD Power C.B.A.>

Fig. D3-6-1

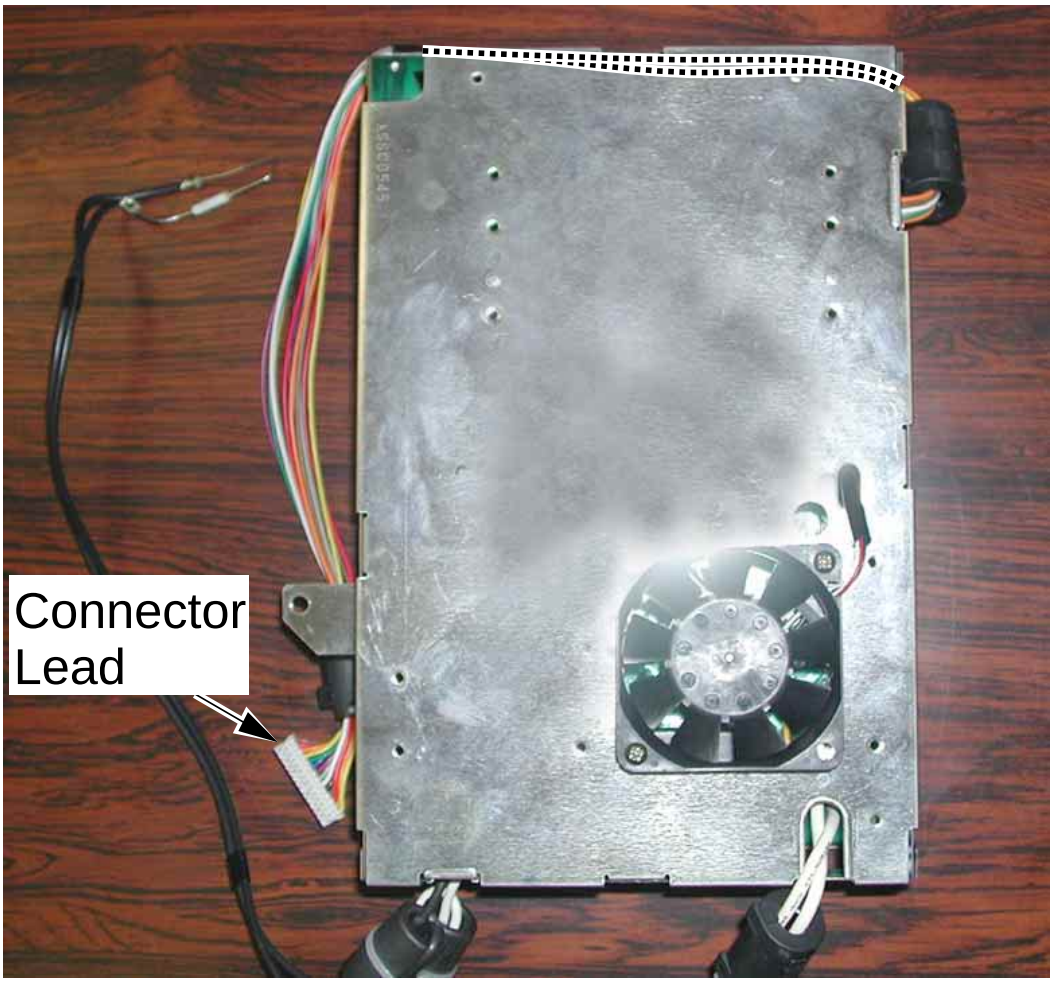


Fig. D3-6-2

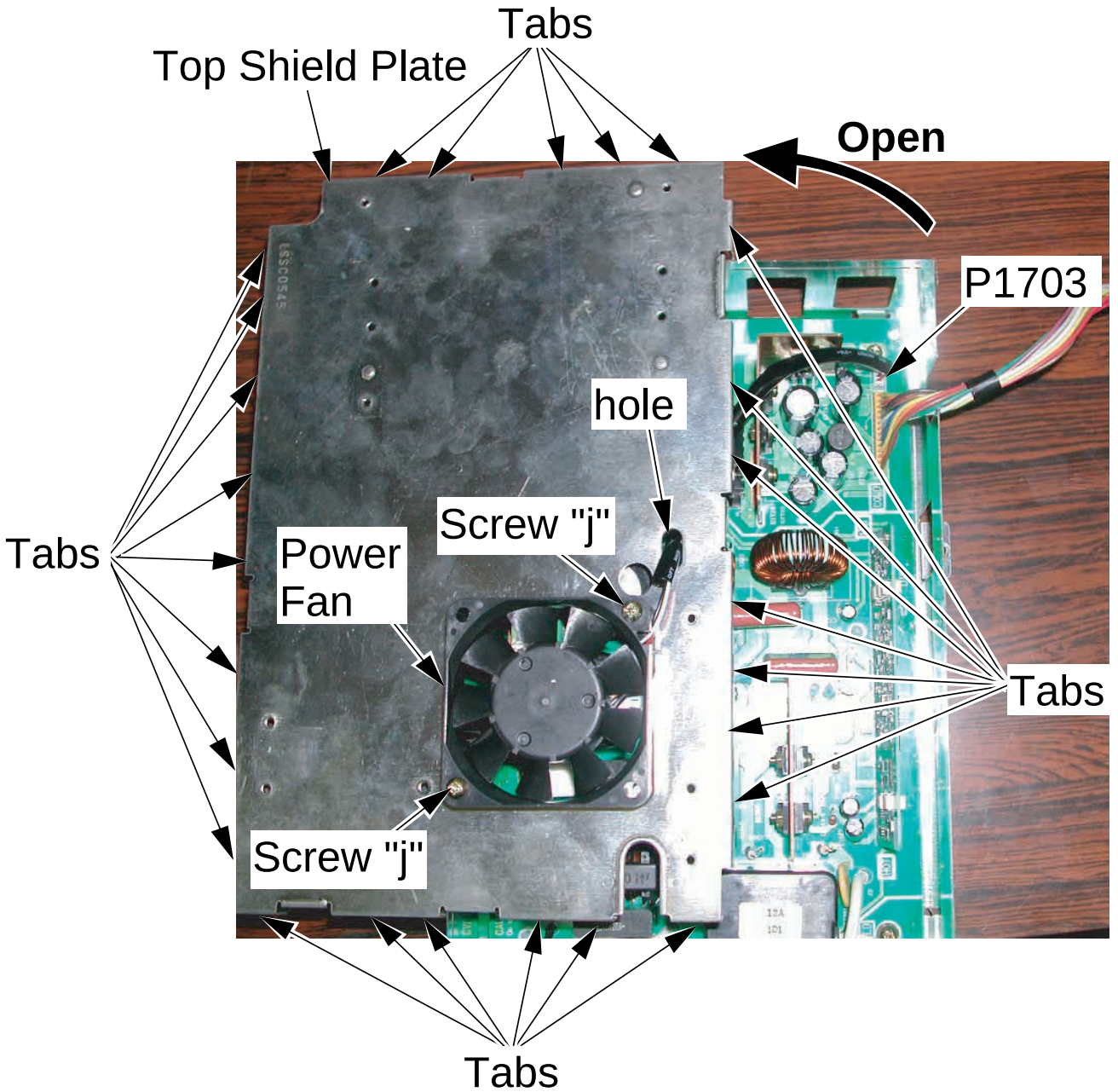
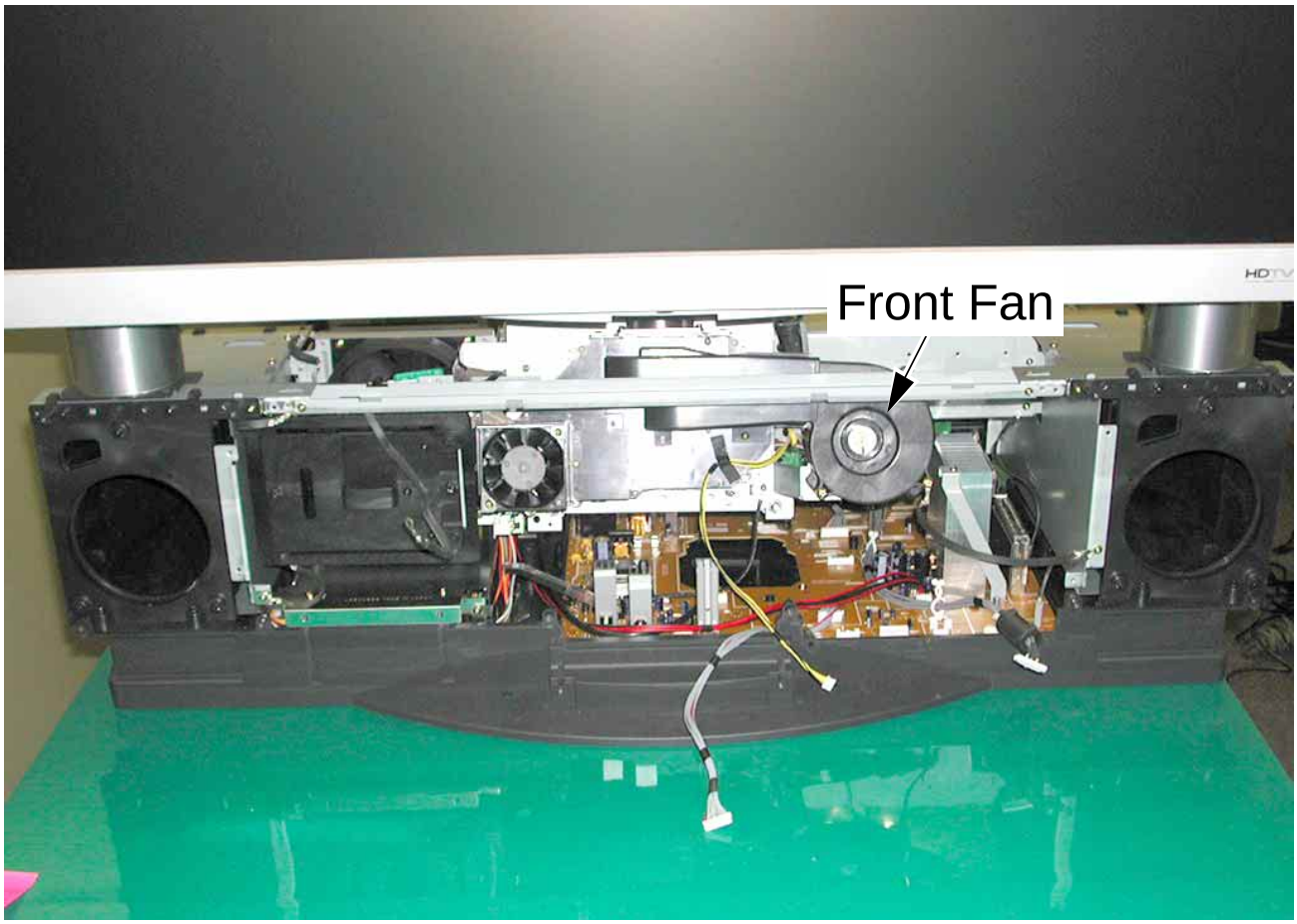

Tabs
Top Shield Plate
Open
P1703
hole
Screw "j"
Power
Fan
Tabs
Tabs
Screw "j"
Tabs

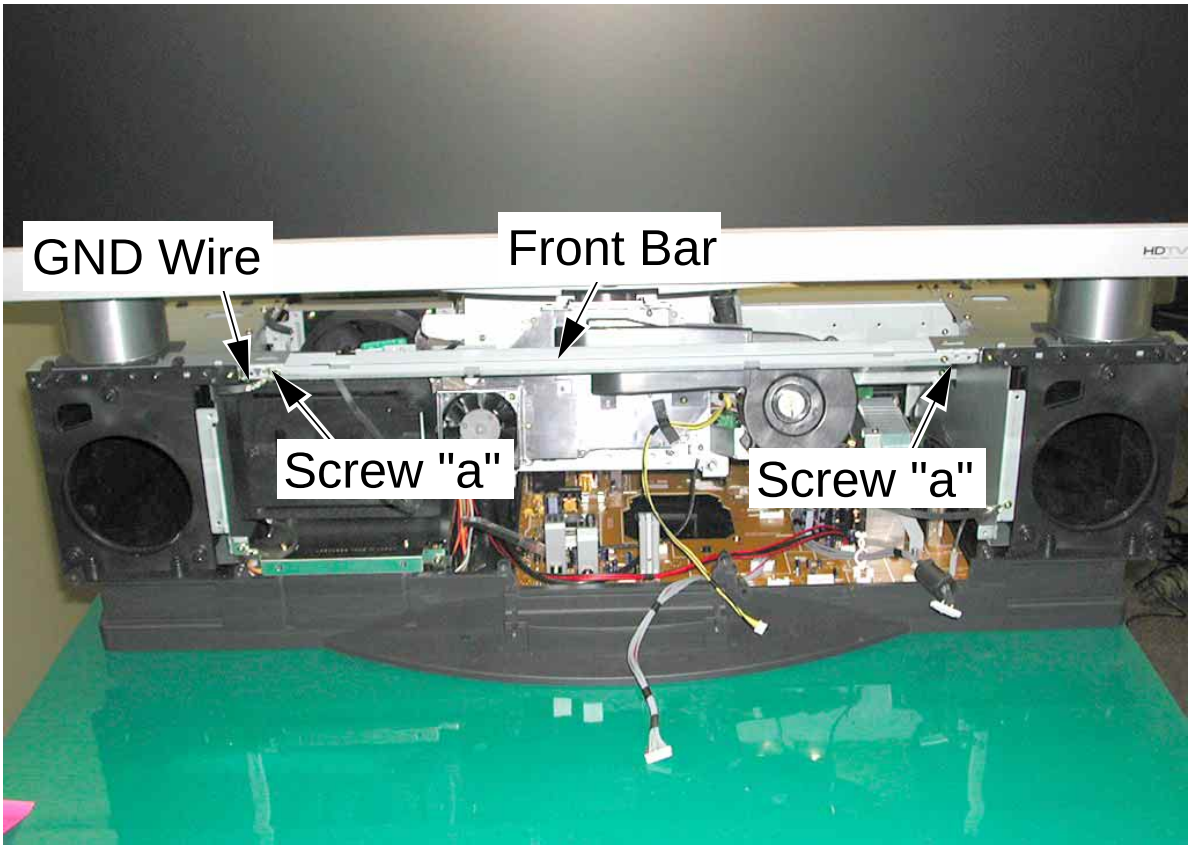
Fig. D3-7

After removing the Base Front Panel Unit



<Front View>

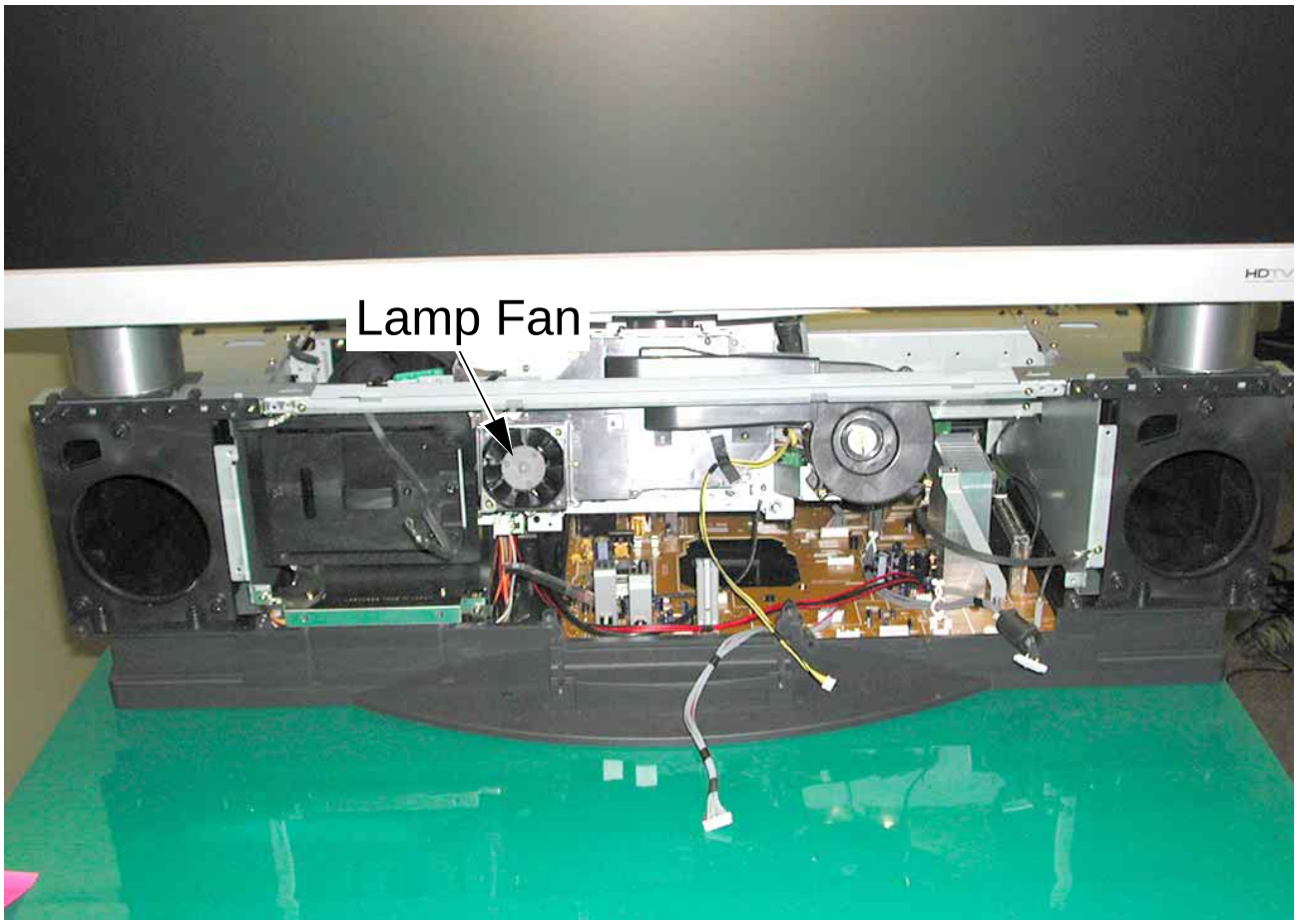
Fig. D4-1-1



<Front View>

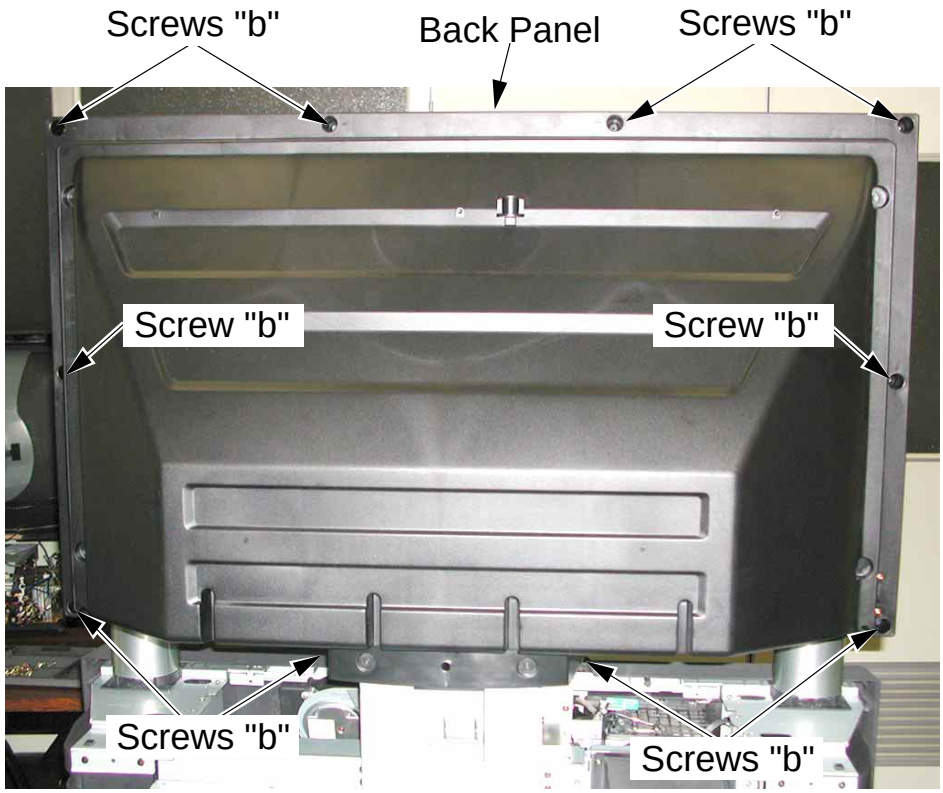
Fig. D4-1-2

After removing the Base Front Panel Unit



<Front View>

Fig. D4-2-1



<Rear View>

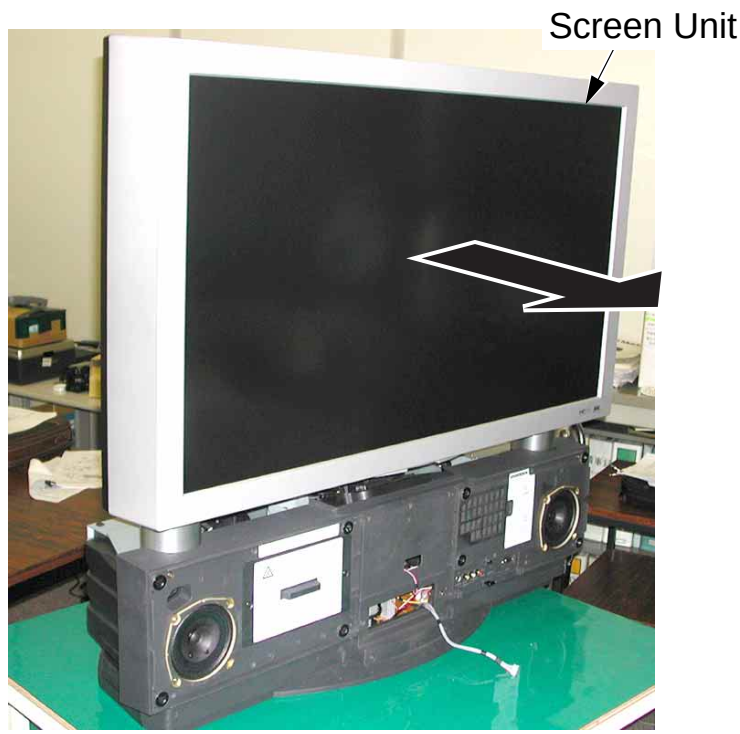
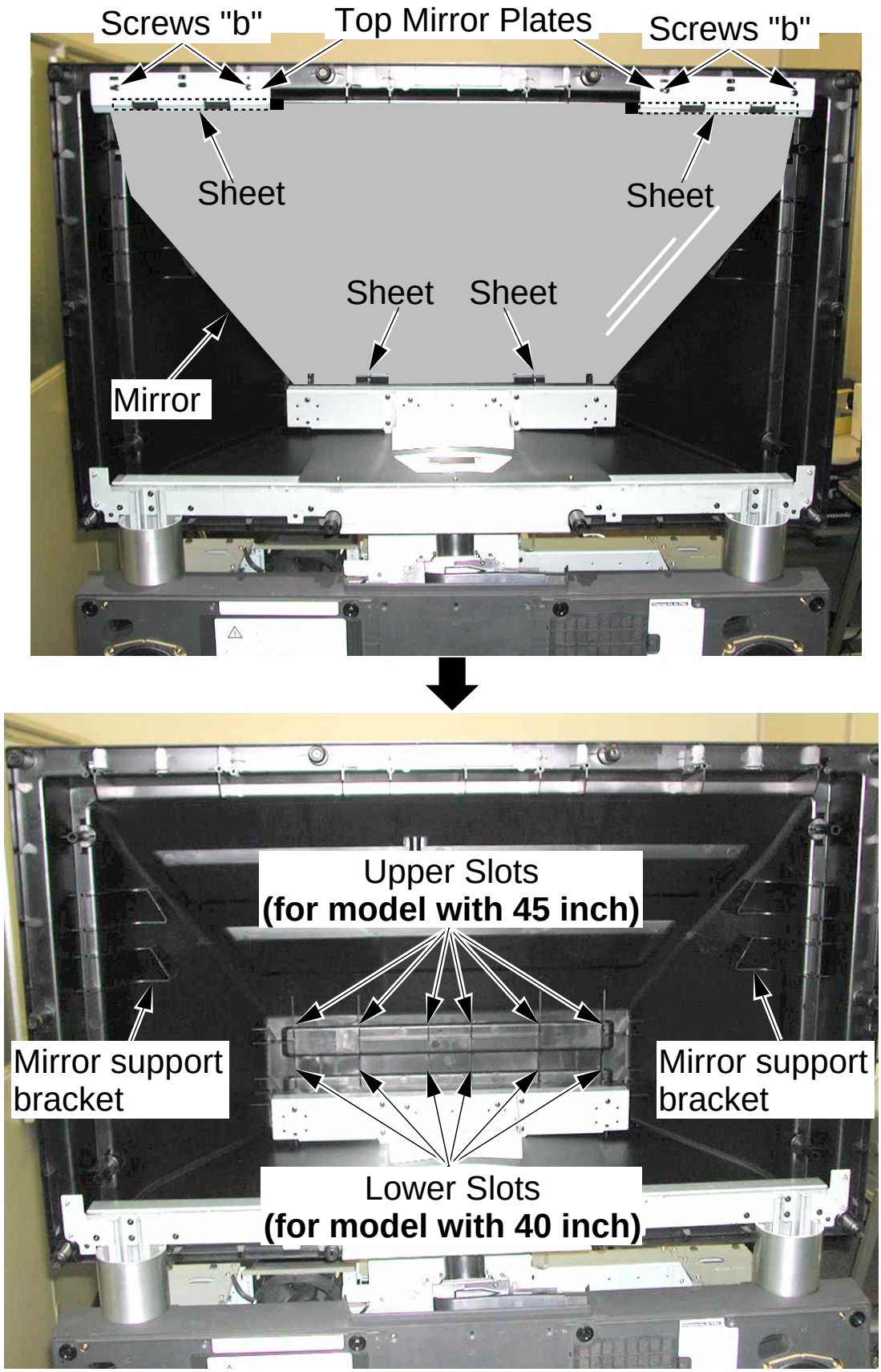


Fig. D5-1



<Front View>

Fig. D5-2

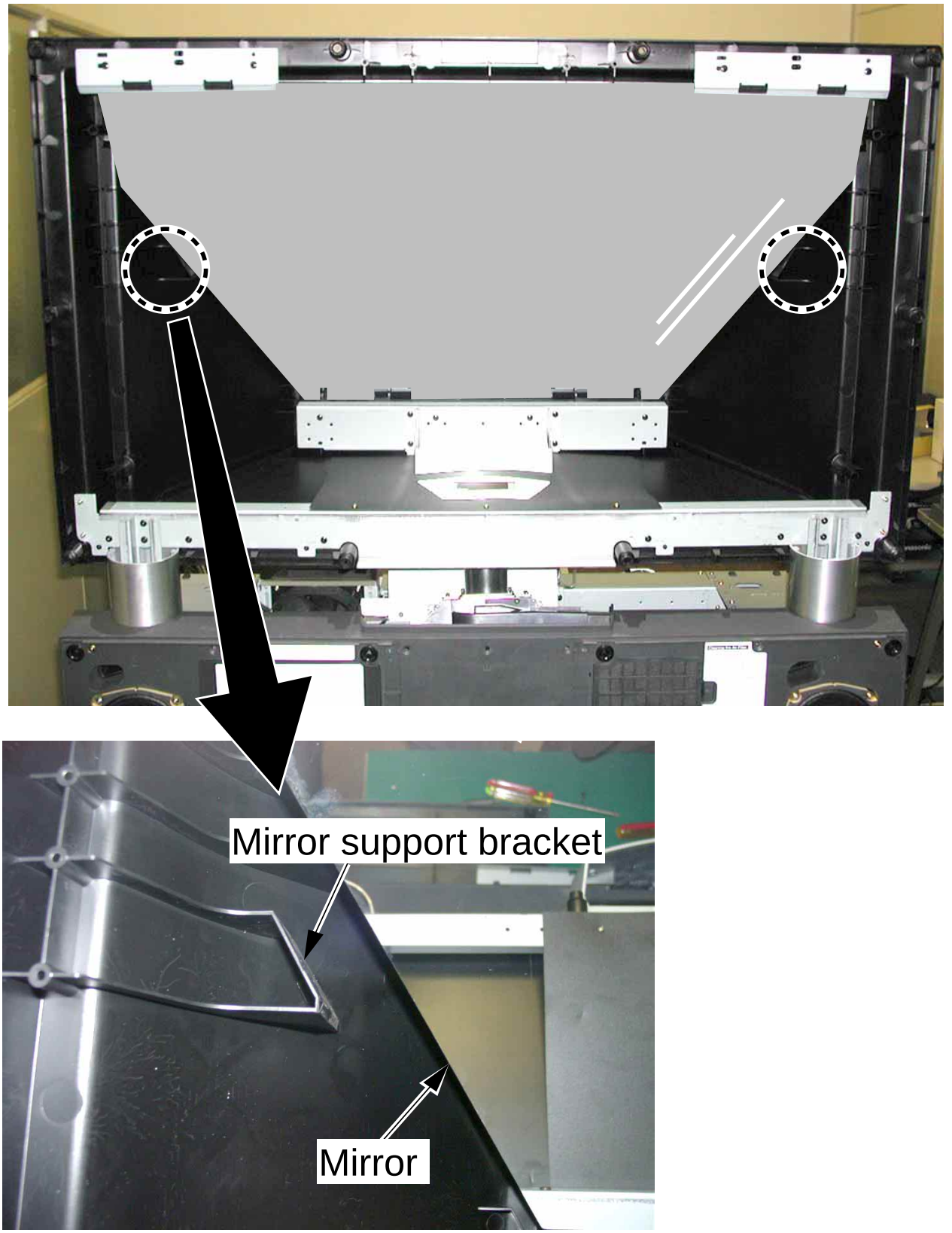
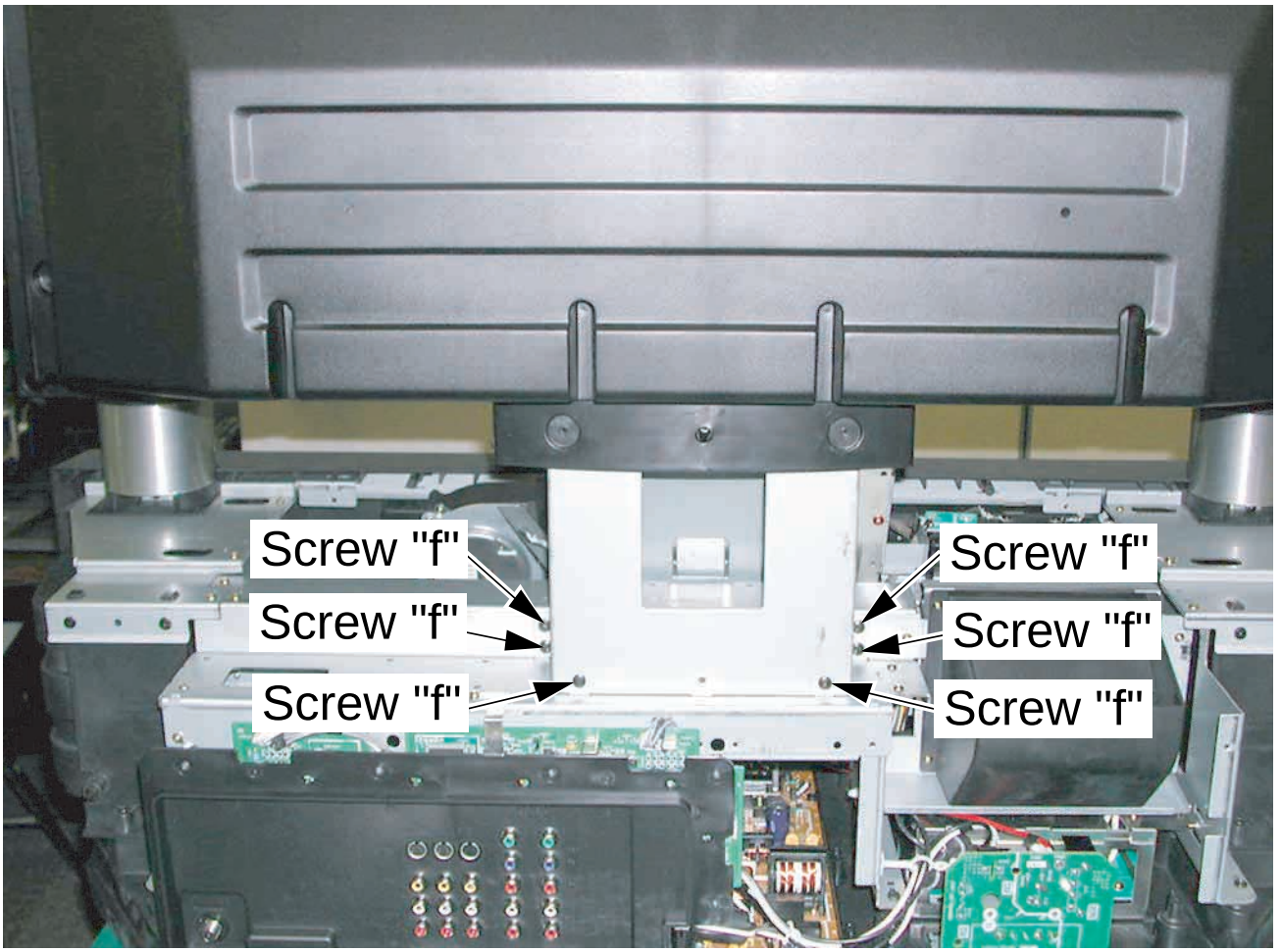
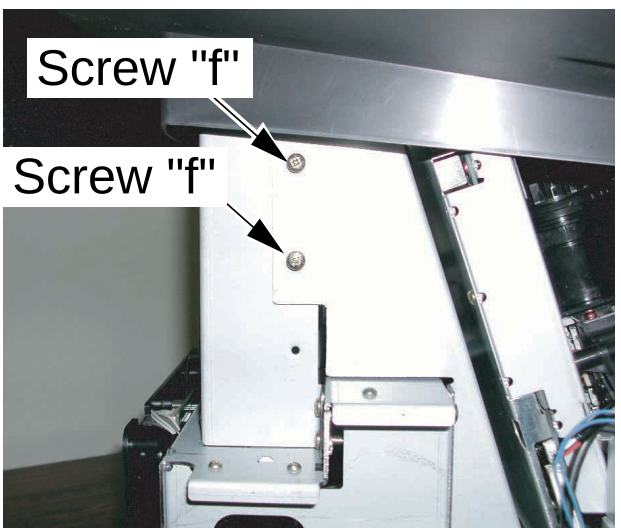


Fig. D5-3-2

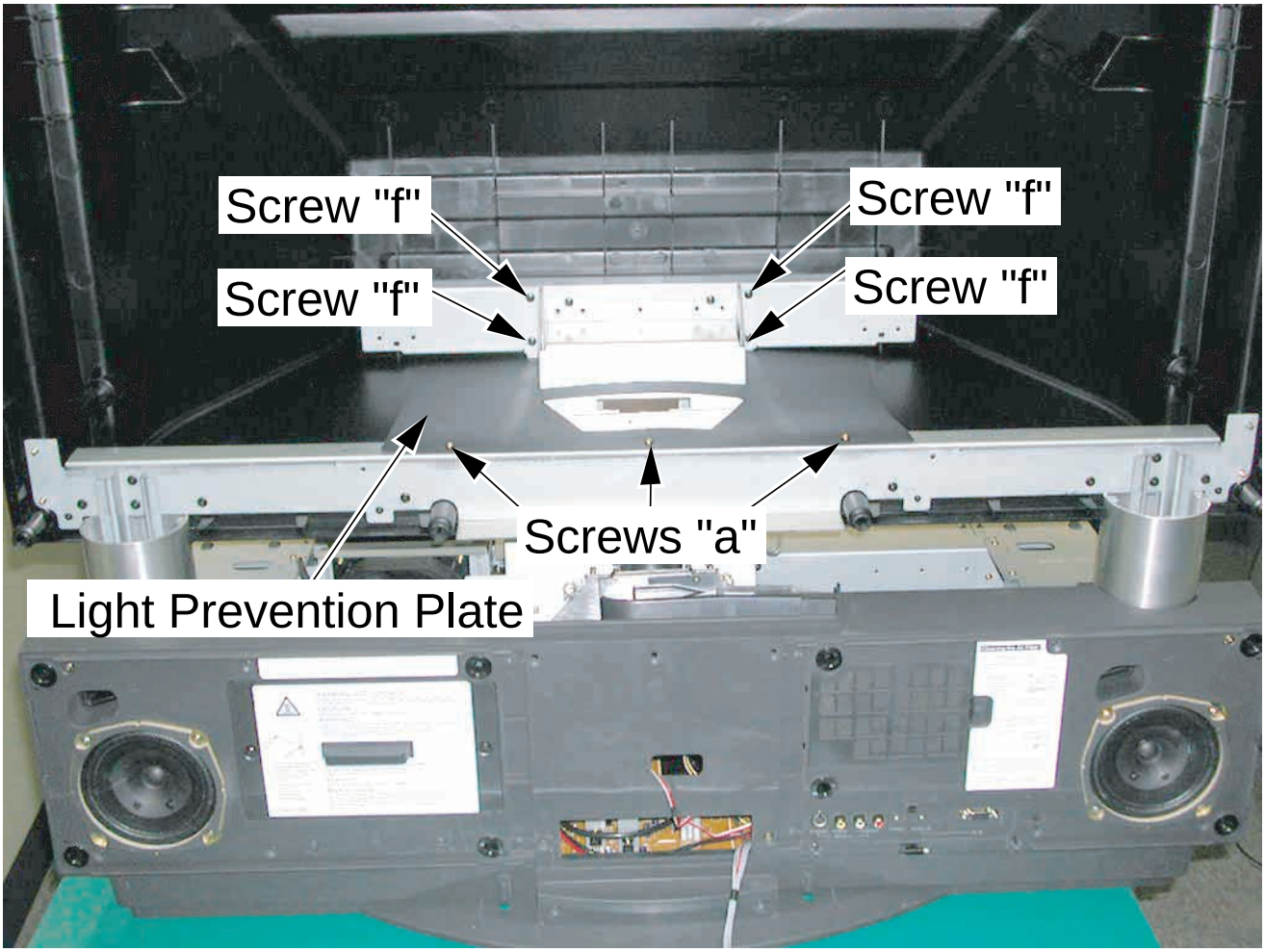


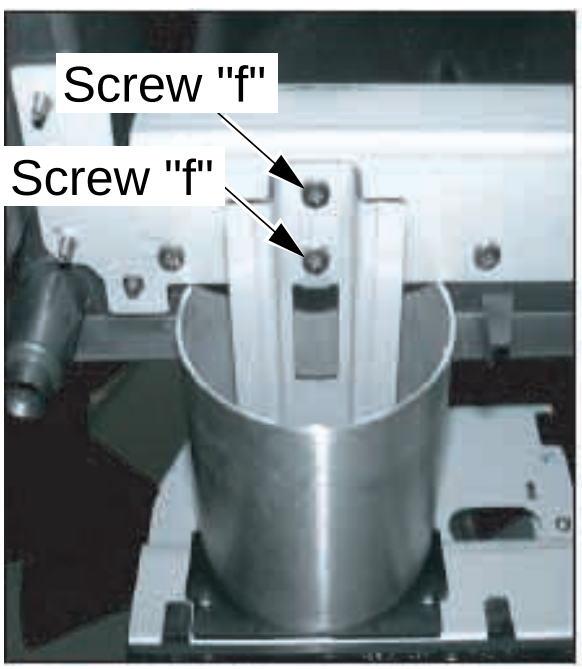
<Rear View>

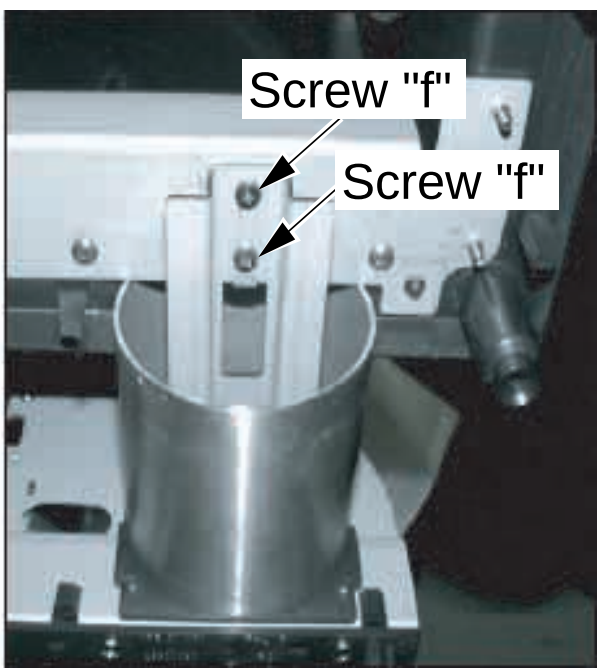


<Side View>

Fig. D5-5







<Front View>

Fig. D5-6

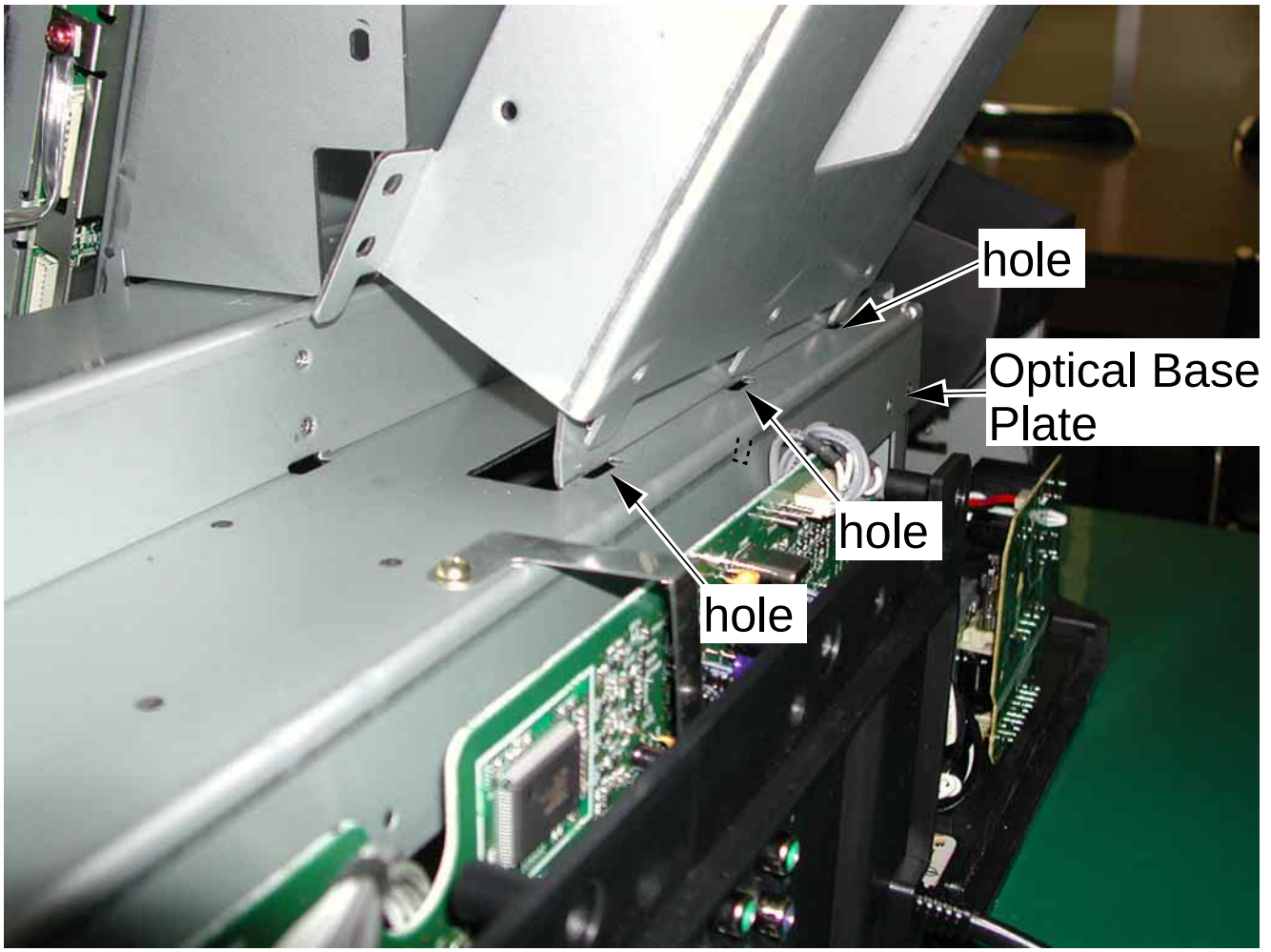
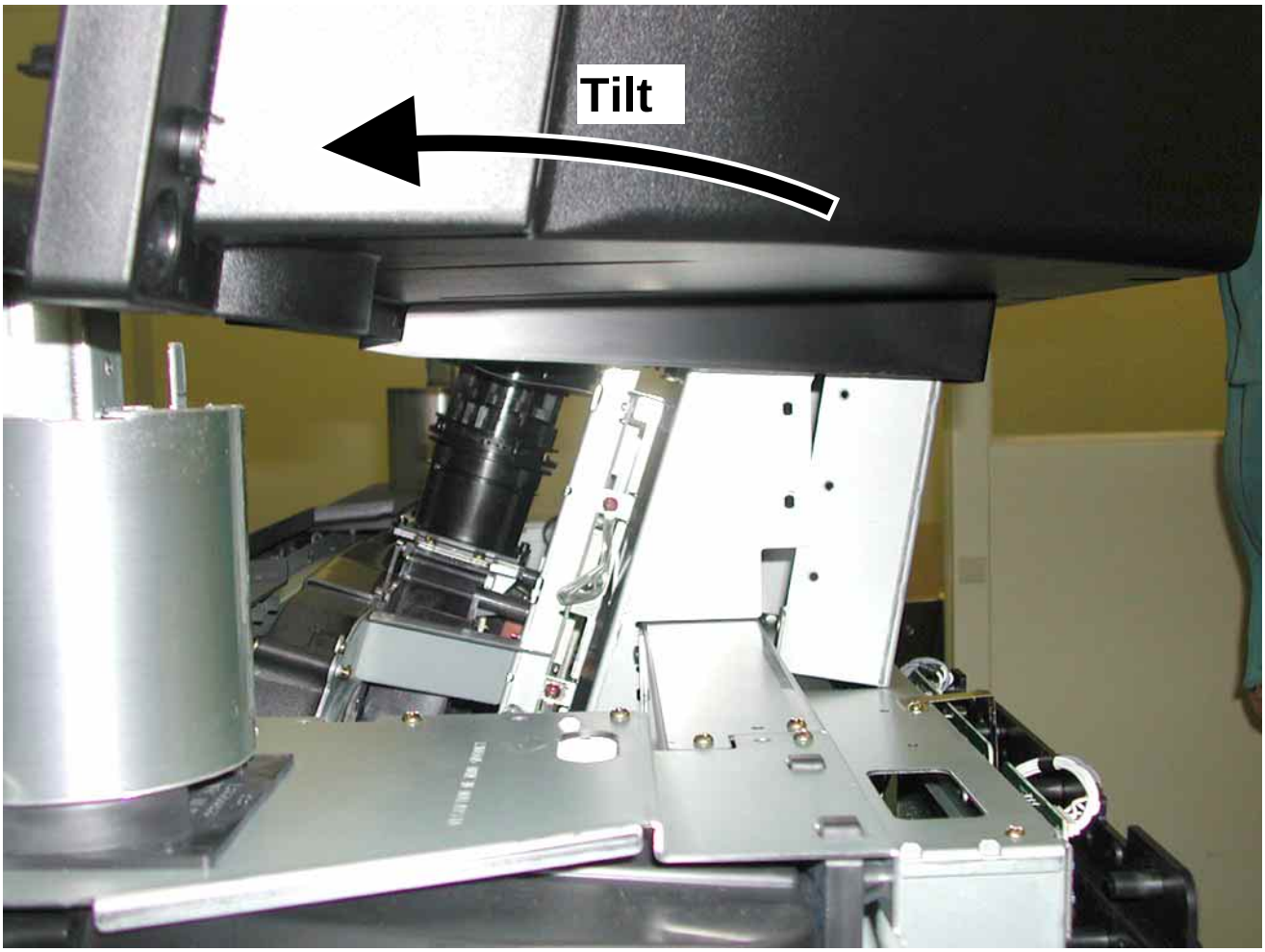
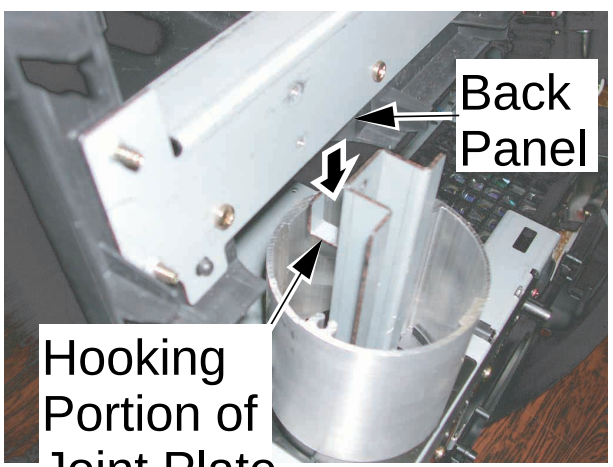


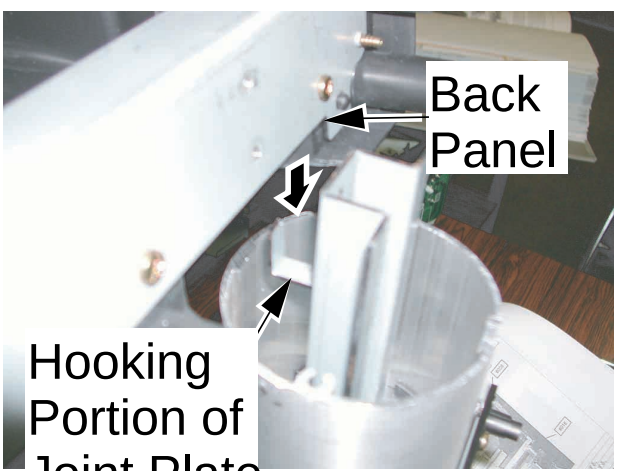
Fig. D5-7



<Side View>



<Front View>
(left)



<Front View>
(right)

Fig. D5-7

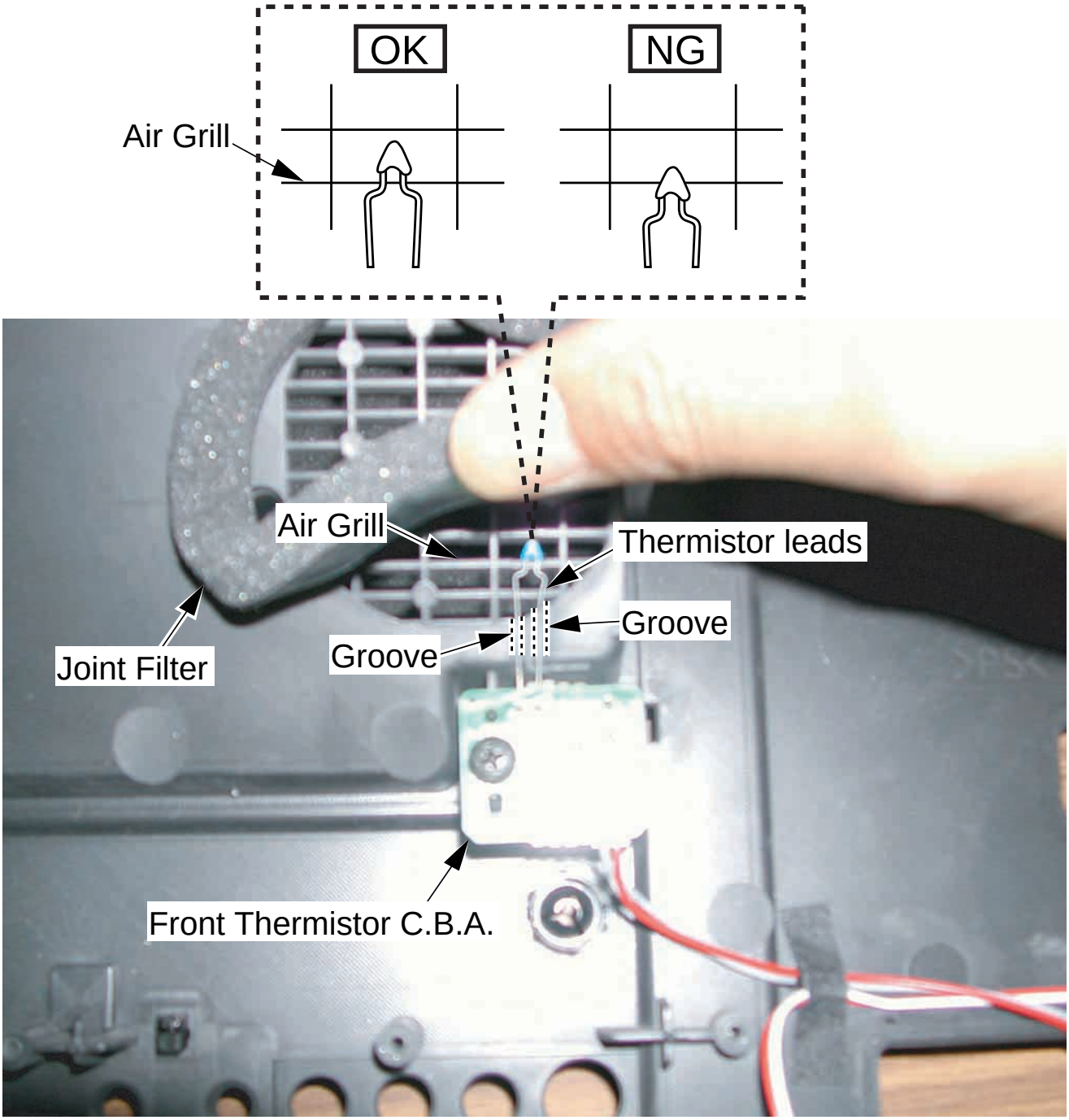
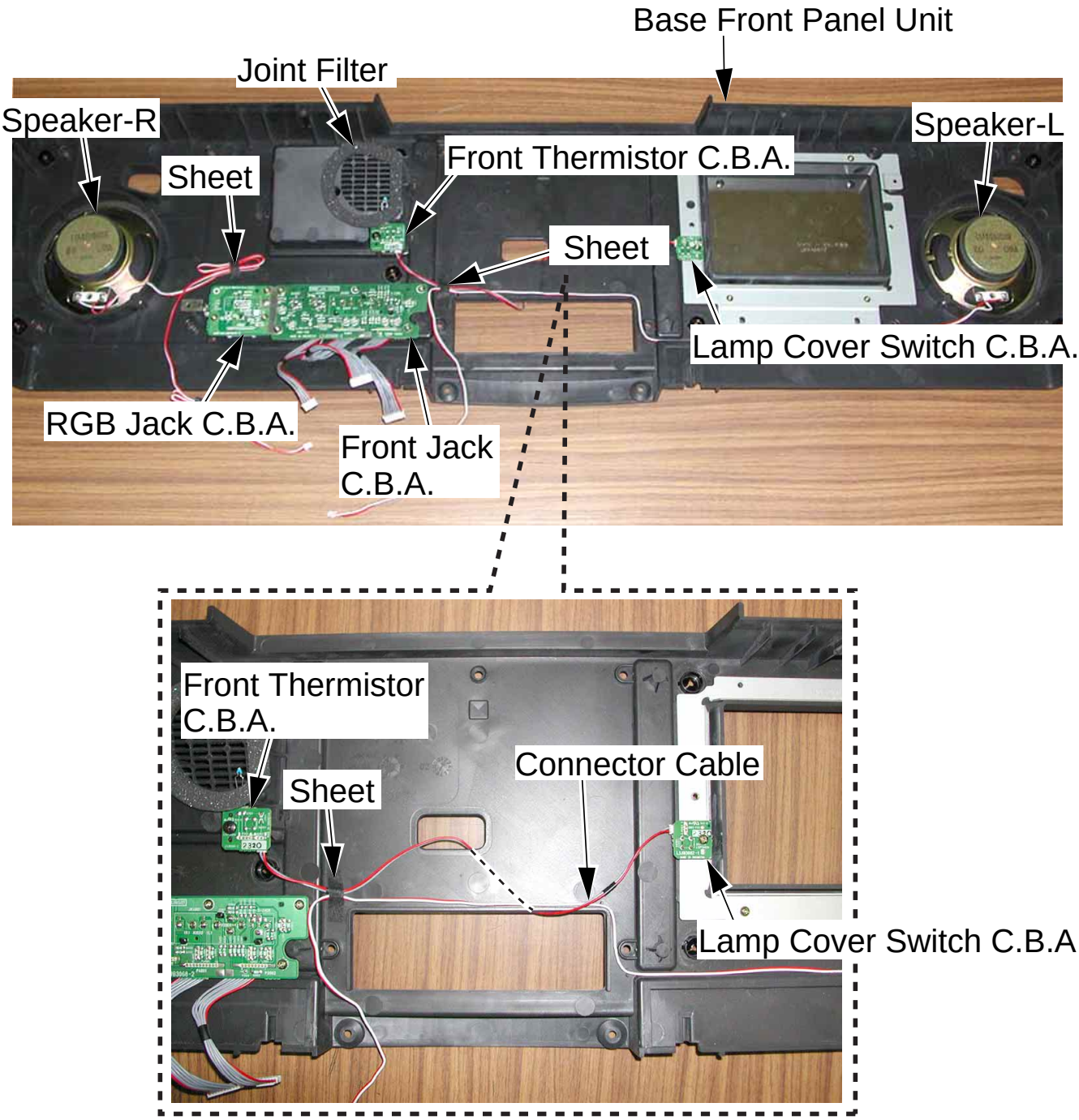

OK
NG
Air Grill
Air Grill
Thermistor leads
Groove
Groove
Joint Filter
Front Thermistor C.B.A.

Fig. D6-1



Wiring of Connector Cable

Fig. D6-3

CABINET SECTION

DISASSEMBLY METHOD

When reassembling, perform the step (s) in the reverse order. Bend, route and dress the wires as they were originally.

Note :

a. Place a cloth or some other soft material under the P.C. Boards or Unit to prevent damage.
b. When reinstalling, ensure that the connectors are connected and electrical components have not been damaged.
c. Do not supply power to the unit during disassembly and reassembly.

Cabinet section contains following removal procedures:

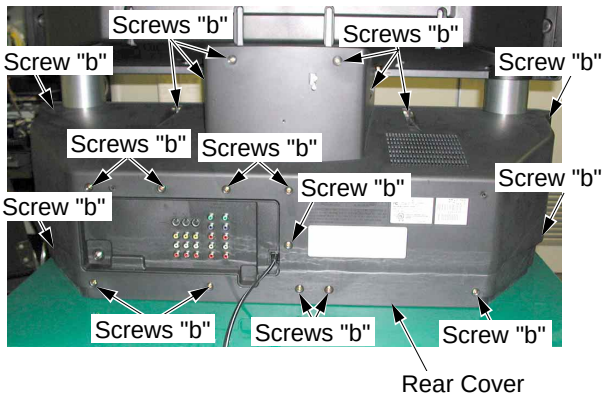
REMOVAL OF THE TV MAIN C.B.A. AND THE REAR JACK C.B.A.
REMOVAL OF THE PROJECTION UNIT
REMOVAL OF THE AUDIO POWER C.B.A., THE DUCT FAN, THE LCD POWER C.B.A., THE POWER FAN AND THE TEMPERATURE FUSE
REMOVAL OF THE FRONT FAN FROM THE UNIT
REMOVAL OF THE LAMP FAN FROM THE UNIT
REMOVAL OF THE SCREEN UNIT, THE MIRROR AND THE BACK PANEL
REMOVAL OF THE FRONT JACK C.B.A., THE RGB JACK C.B.A., THE FRONT THERMISTOR C.B.A., THE LAMP COVER SWITCH C.B.A., AND THE SPEAKER

Following screws are removed in the procedures above:

Screw for disassembly/assembly			
Screw "a"	㊷	small, gold	} These screws are used for many parts.
Screw "b"	㊶	large, gold	
Screw "c"	㊽	large	
Screw "d"	㊾	small	
Screw "e"	㊸	small, red	
Screw "f"	㊹	large, black	
Screw "g"	㊺	large	
Screw "h"	㊸	long	
Screw "i"	㊷	long	
Screw "j"	㊺	long	

REMOVAL OF THE TV MAIN C.B.A. AND THE REAR JACK C.B.A.

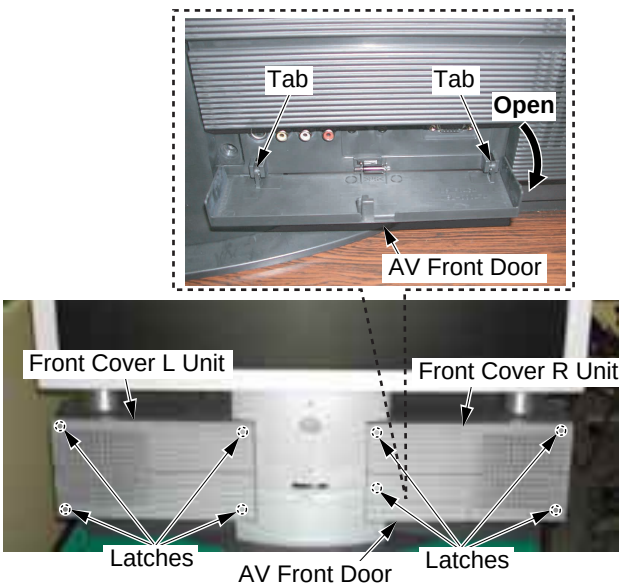
1. Remove the Rear Cover by removing 20 Screws.



<Rear View>

Fig. D1-1

2. 1) Remove the AV Front Door by releasing the Tabs after opening.
   2) Remove the Front Cover L Unit and the Front Cover R Unit from the latches.



<Front View>

Fig. D1-2

3. Open the Center Panel Unit by removing the 4 Screws.

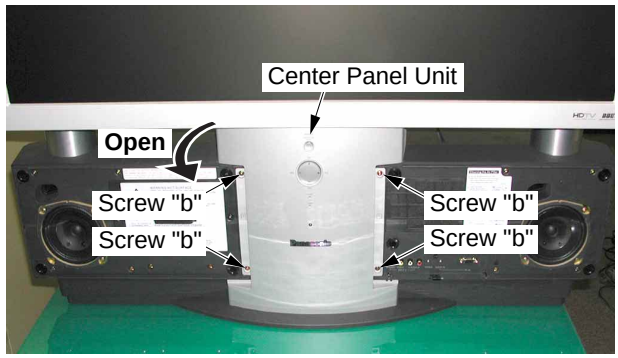


Fig. D1-3

4. 1) Disconnect the Connector P6303 on the Operation C.B.A.
   2) Remove the Center Panel Unit.

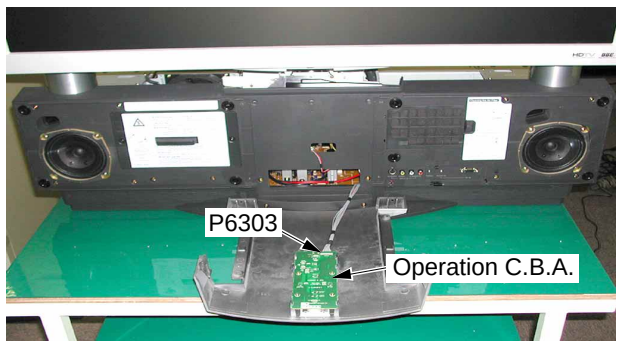


Fig. D1-4

5. Remove the Lamp Cover by loosening the 2 Screws.

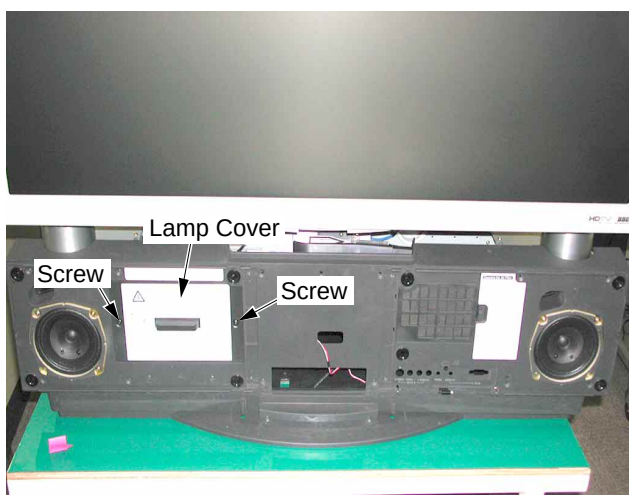


Fig. D1-5

6. Open the Base Front Panel Unit by removing the 16 Screws.

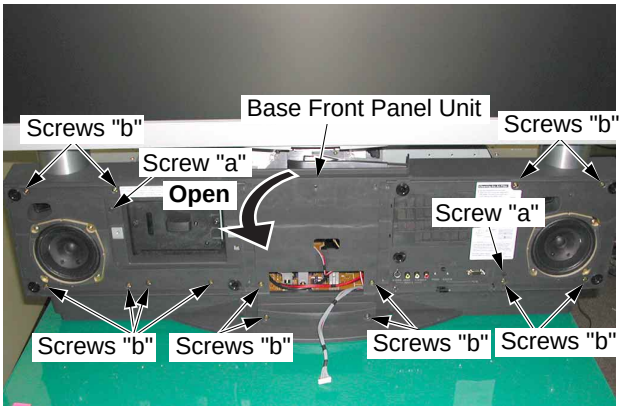


Fig. D1-6

7. 1) Disconnect Connector P2911 on the Front Thermistor C.B.A.
   2) Remove the Screw of the GND Wire.

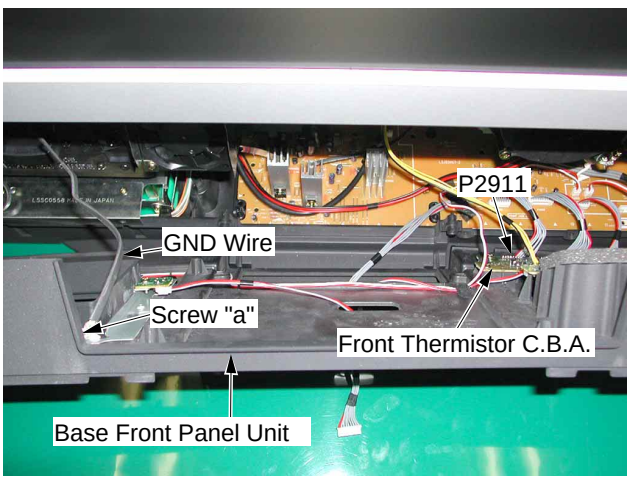
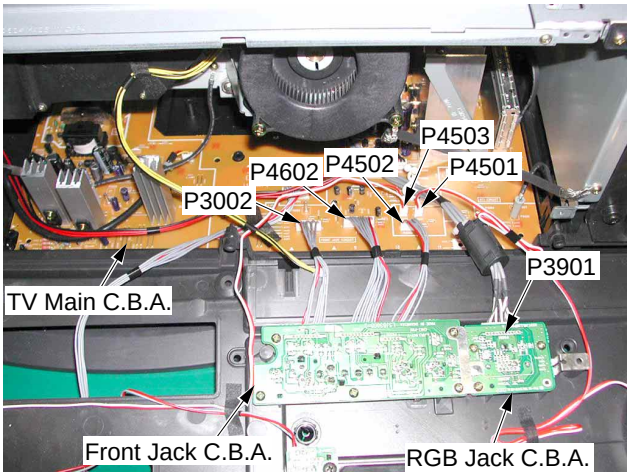
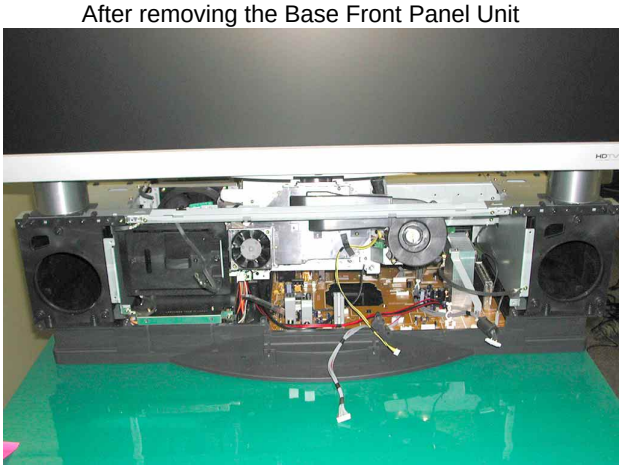


Fig. D1-7

8. Disconnect Connectors P3002, P4602, P4502, P4503 and P4501 on the TV Main C.B.A. and Connector P3901 on the RGB Jack C.B.A. Then, remove the Base Front Panel Unit.



After removing the Base Front Panel Unit



<Front View>

Fig. D1-8

9. 1) Disconnect Connectors P1005 (or P1007), P3006, P1010 and P4504 on the TV Main C.B.A.
   2) Remove the GND Plate by removing the 2 Screws.
   3) Remove the Screw of the GND Wire.

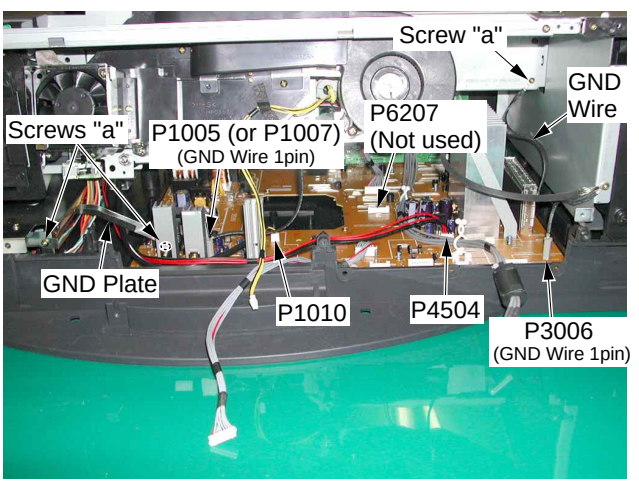


Fig. D1-9

10. Disconnect Connectors P2501, P2701, P2305 on the LCD Main C.B.A. and release them from the clampers.

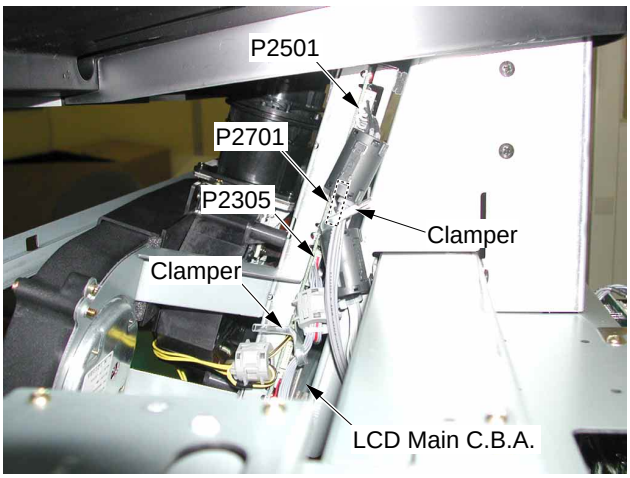


Fig. D1-10

11. 1) Disconnect Connector P804 on the TV Main C.B.A. by pressing the Locking Tab of the P804 connector cable and release it from the clamper.
    2) Disconnect Connector P1101 on the Audio Power C.B.A. and release it from the clamper.
    3) Remove the Screw on the GND Plate.
    4) Remove 3 Screws on the TV Frame.

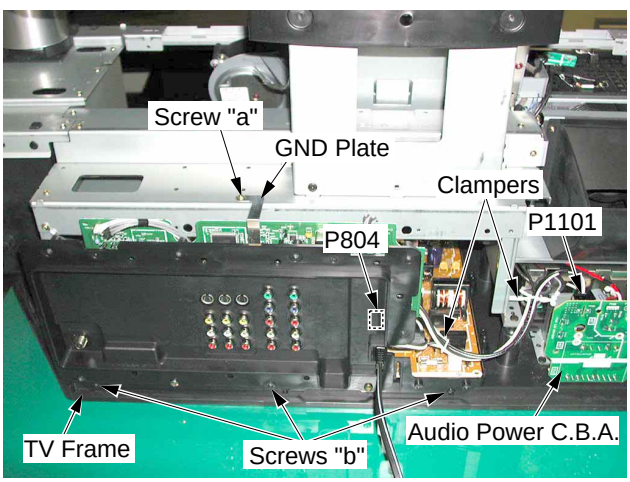


Fig. D1-11

12. Lift up and slide the TV Frame straight out by releasing the 2 Tabs from holes, and disconnect Connector P7001 while sliding the TV Frame at this time.

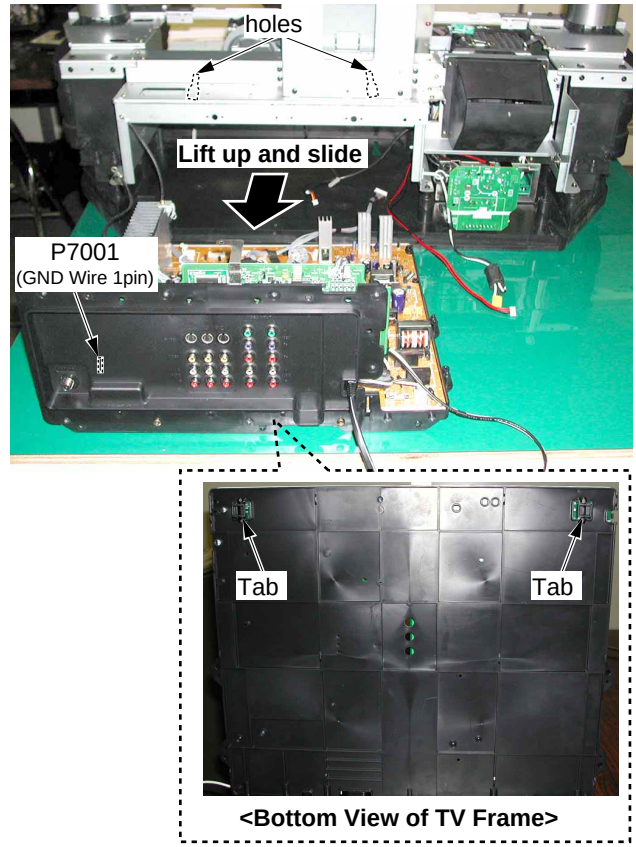


Fig. D1-12

13. 1) Remove the Rear Jack Panel from the Rear Jack C.B.A. by removing the 7 Screws.
    2) Release the AC Cord by from the slot of the Rear Jack Panel.

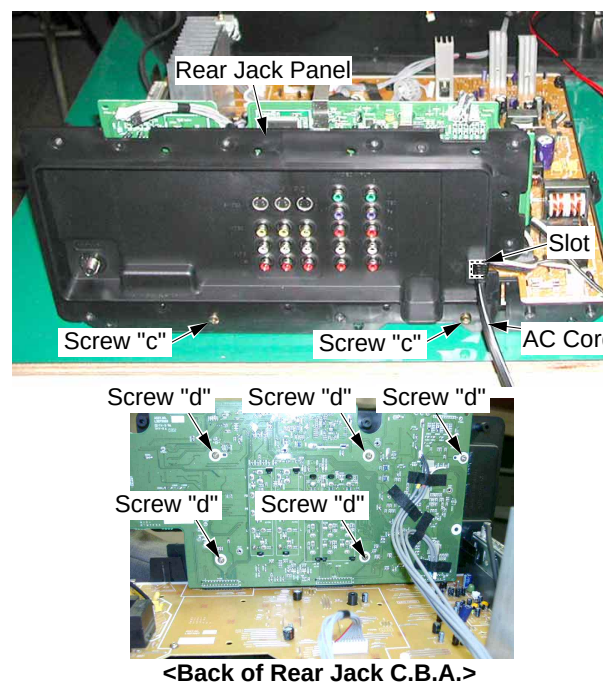
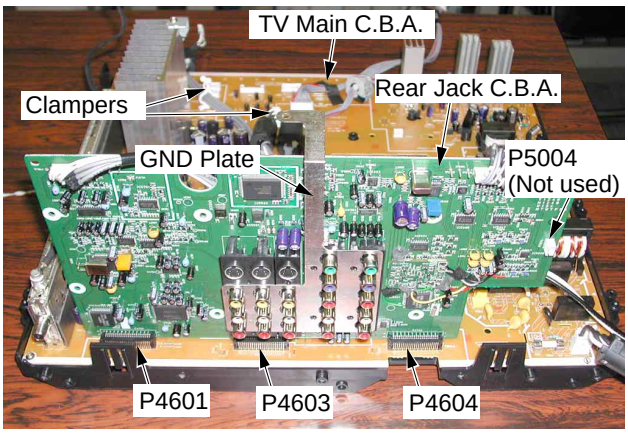


Fig. D1-13

14. Remove the Rear Jack C.B.A. by disconnecting Connectors P4601, P4603 and P4604 on the TV Main C.B.A. and release it from the clamper.

Note:

1. When replacing the Rear Jack C.B.A., remove the GND Plate from the Rear Jack C.B.A.
2. Take extreme caution when handling the Rear Jack Panel to avoid damage to Connectors P4601, P4603, P4604 on the TV Main C.B.A.



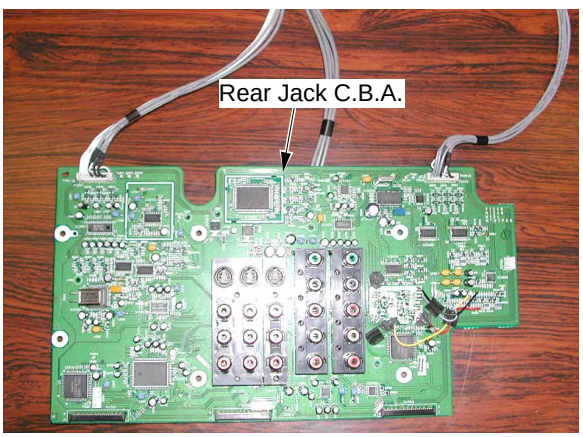


Fig. D1-14

15. 1) Remove the Support Plate by removing the 2 Screws.
    2) Remove the 3 Screws on the TV Main C.B.A.
    3) Remove the TV Main C.B.A. from the TV Frame by releasing the 3 Tabs.
    4) Remove the AC Cord from Connector P801.

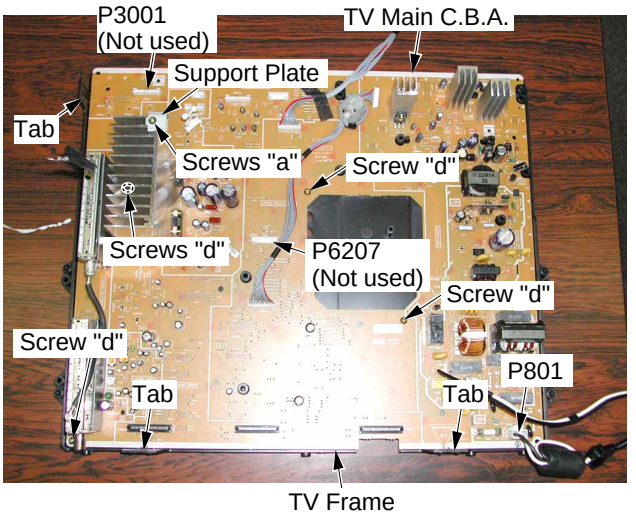


Fig. D1-15

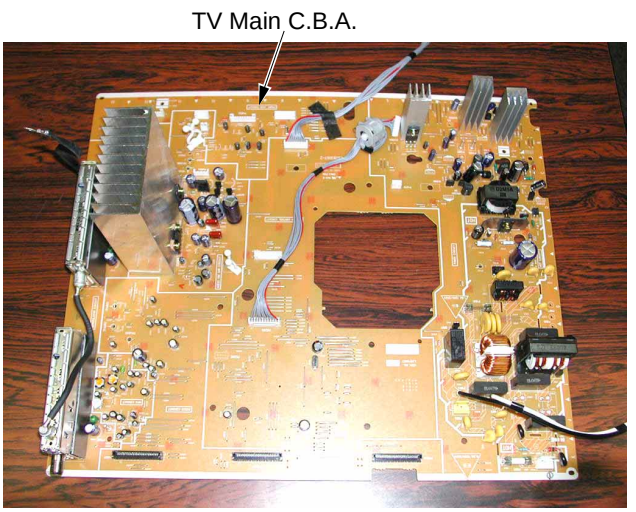


Fig. D1-16

Note:

1. When servicing, be careful not to damage the connectors on the C.B.A.s.
2. Connector P3001 is deleted on running change basis.

REMOVAL OF THE PROJECTION UNIT

Projection Unit includes the Optical Block, the LCD Main C.B.A., though does not include the Lamp.

CAUTION:

1. **Be sure to make a note of the LAMP RUN TIME (value A) in Service Mode (LCD Main C.B.A. (1)):**

LAMP TIME is stored in EEPROM on the LCD Main C.B.A. Therefore, before removing the Projection Unit at the user's location, make a note of the LAMP RUN TIME (value A) in Service Mode.
Then, after installing the new Projection Unit **(without the Lamp)** at the user's location, be sure to install the original Lamp and set the LAMP RUN TIME to the original value (value A) in Service Mode.
Otherwise, OSD and LED indication to request for Lamp replacement will be displayed at the wrong time.

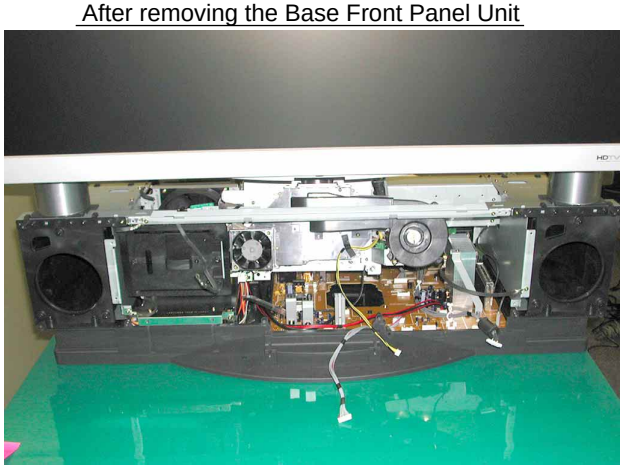
Note:
In case it is impossible to make a note of the LAMP RUN TIME because of a defective LCD Main C.B.A., ask the customer their daily average use and the approximate age of the current Lamp. Then, calculate the LAMP RUN TIME and make a note. Refer to "BEFORE REMOVING THE PROJECTION UNIT FROM THE UNIT AT THE USER'S LOCATION" in SERVICE NOTES.

2. Be sure to make a note of the FILTER TIME (value B) in Service Mode (LCD Main C.B.A. (1)):

FILTER TIME is stored in EEPROM on the LCD Main C.B.A. Therefore, before removing the Projection Unit at the user's location, make a note of the FILTER TIME (value B) in Service Mode.
Then, after installing the new Projection Unit at the user's location, be sure to set the FILTER TIME to the original value (value B) in Service Mode.
Otherwise, OSD and LED indication to request for Air Filter cleaning will be displayed at the wrong time.

1. Make a note of the LAMP RUN TIME (value A) and the FILTER TIME (value B) in Service Mode.
2. Remove the Rear Cover, the AV Front Door, the Front Cover L Unit, the Front Cover R Unit, the Center Panel Unit, the Lamp Cover and the Base Front Panel Unit. Refer to Steps 1~7 in "HOW TO REMOVE THE TV MAIN C.B.A. AND THE REAR JACK C.B.A."

After removing the Base Front Panel Unit



<Front View>

Fig. D2-1

3. 1) Remove the Front Bar by removing 2 Screws.
   2) Disconnect Connector P1005 (or P1007), P1010 on the TV Main C.B.A. Remove the 2 Screws on the 3 GND Wires.

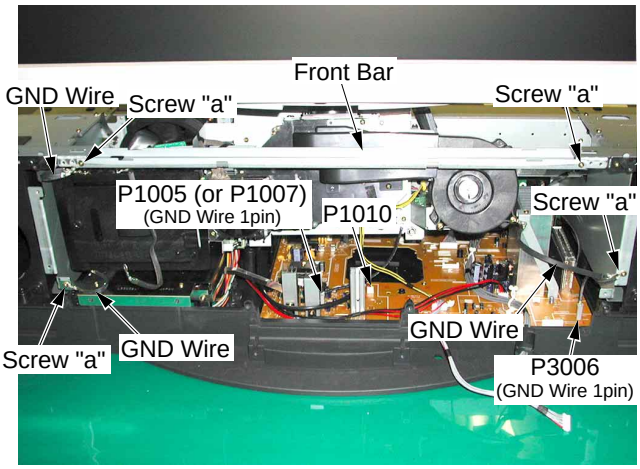


Fig. D2-2

4. Disconnect Connectors P2501, P2701, P2305 on the LCD Main C.B.A. and release them from the clampers.

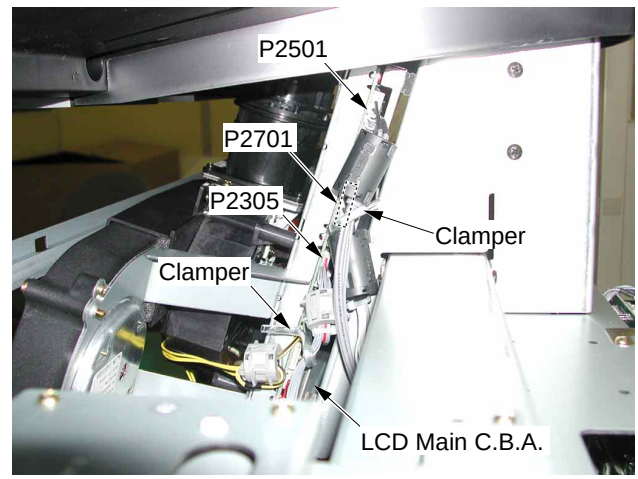


Fig. D2-3

5. Remove the Duct Fan Unit by removing the 4 Screws and releasing the 2 Hooking Portions.

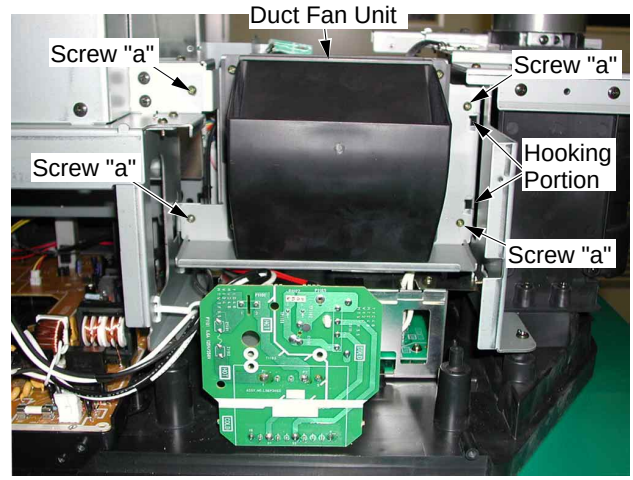


Fig. D2-4

6. 1) Disconnect the cable from the Lamp Socket by removing 2 Screws.
   2) Remove the Temperature Fuse on the Lamp House by removing the 2 Screws.
   3) Remove Connector P1905 on the LCD Main C.B.A.
   4) Remove the Screw of the GND Plate and GND Wire.
   5) Remove the 2 Screws of the 2 GND Wires.

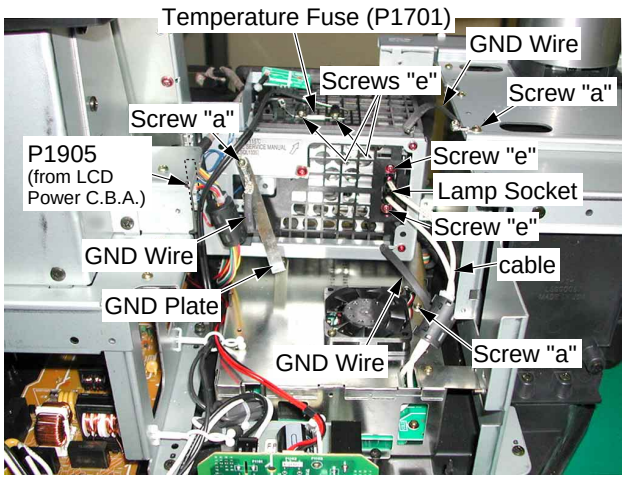
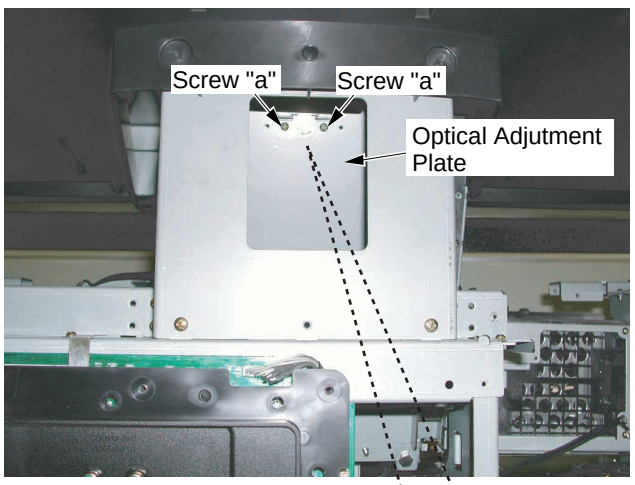


Fig. D2-5

7. Remove the 2 Screws on the Optical Adjustment Plate.



<Rear View>

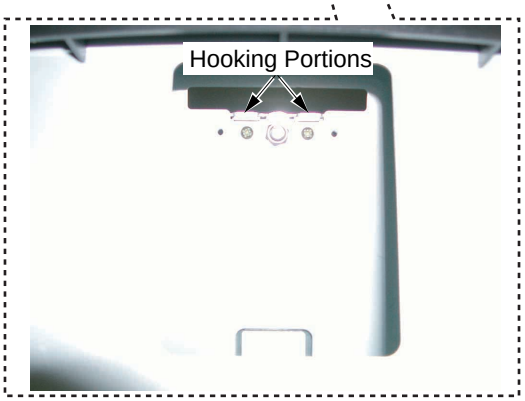
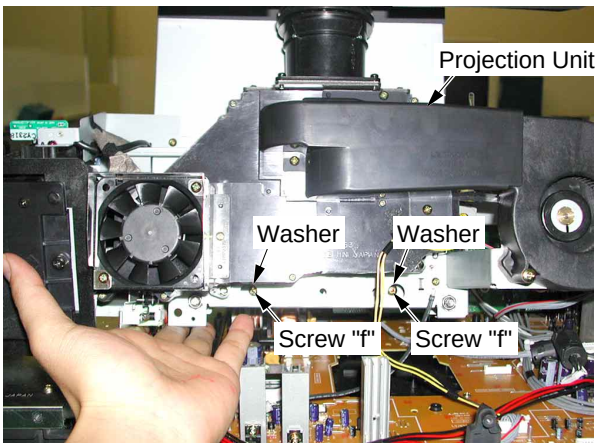


Fig. D2-6

8. Remove the 2 Screws and 2 Washers through the plate holes while holding the Projection Unit.
   Tips on removal of the Projection Unit:
   To hold the Projection Unit, press it against the rear.

CAUTION:

- **Be sure to hold the Projection Unit while removing the 2 Screws and 2 Washers.**
- **Take extreme caution when removing the 2 Screws and 2 Washers so the Projection Unit does not fall out.**



<Front View>

Fig. D2-7

9. Remove the Projection Unit from the unit carefully.

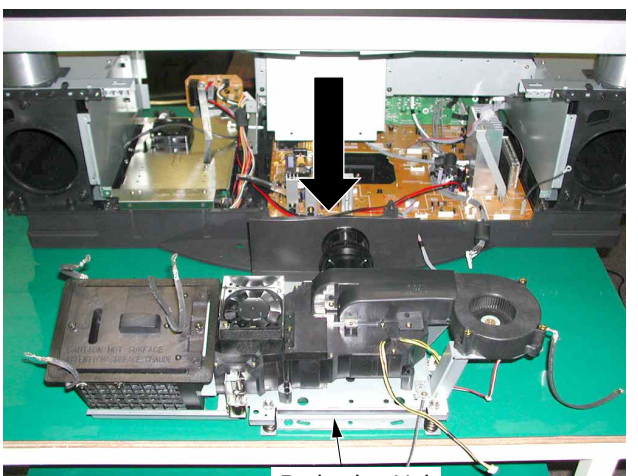


Fig. D2-8

10. 1) Peel off the Light Prevention Plate on the Projection Unit.
2) Remove the Lamp from the Projection Unit.

CAUTION:

After removing the Projection Unit, take out the Light Prevention Plate and the Lamp from the Projection Unit once and keep them. Then, be sure to install the Light Prevention Plate and the Lamp into the new Projection Unit for replacement.

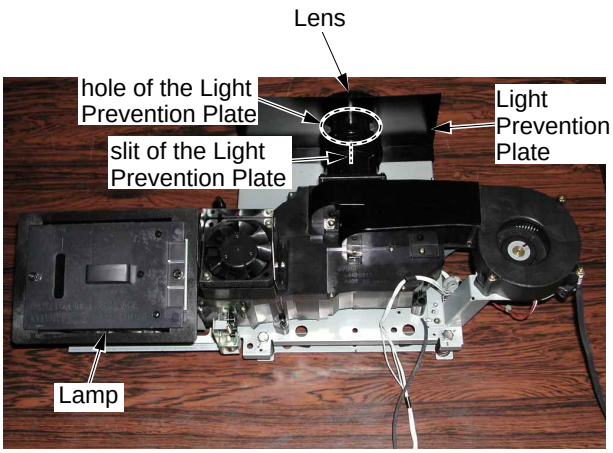


Fig. D2-9

Reassembly Notes for Light Prevention Plate:

1) Insert the hole of the Light Prevention Plate to the Projection Lens while opening slit.
2) Contact it against the ring of the Projection Lens and paste with double-sided adhesive tape as shown.

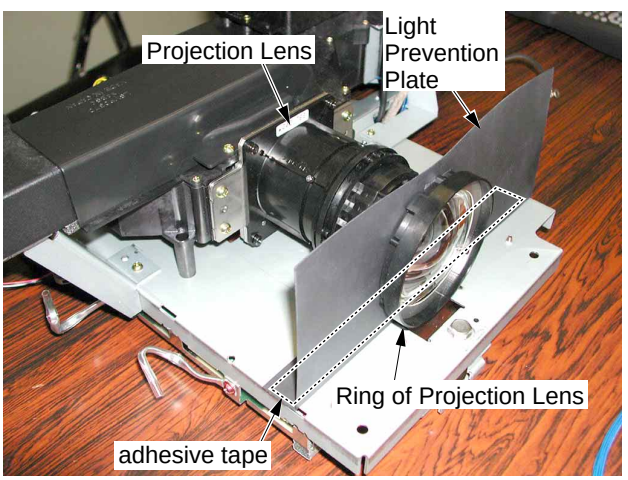
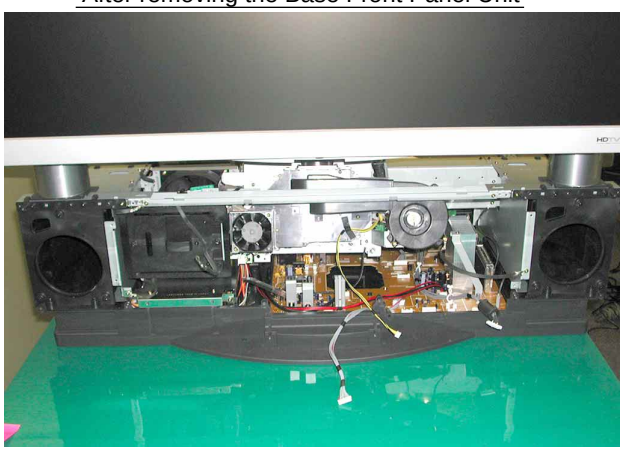


Fig. D2-10

REMOVAL OF THE AUDIO POWER C.B.A., THE DUCT FAN, THE LCD POWER C.B.A., THE POWER FAN AND THE TEMPERATURE FUSE

1. Remove the Rear Cover, the AV Front Door, the Front Cover L Unit, the Front Cover R Unit, the Center Panel Unit, the Lamp Cover and the Base Front Panel Unit. Refer to Steps 1~7 in “HOW TO REMOVE THE TV MAIN C.B.A. AND THE REAR JACK C.B.A.”

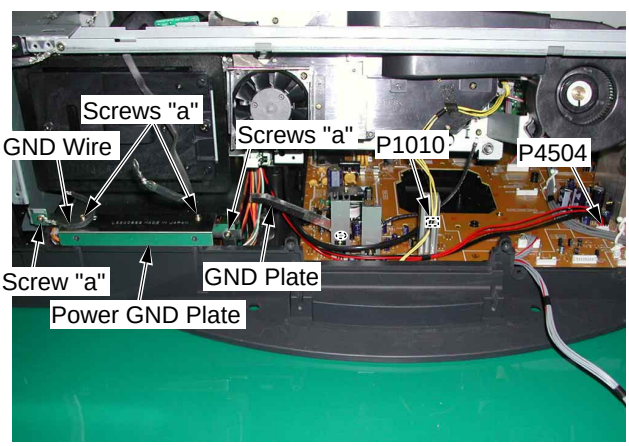
After removing the Base Front Panel Unit



<Front View>

Fig. D3-1

2. 1) Disconnect Connectors P1010, P4504 on the TV Main C.B.A.
   2) Remove the only one Screw of the GND Plate.
   3) Remove the Screw of the GND Wire.
   4) Remove the Power GND Plate by removing 2 Screws.



<Front View>

Fig. D3-2

3. 1) Disconnect Connector P804 on the TV Main C.B.A. and release it from the clamper.
   2) Disconnect Connector P1101 on the Audio Power C.B.A. and release it from the clamper.
   3) Remove the Duct Fan Unit by removing 4 Screws and releasing the Hooking Portions.

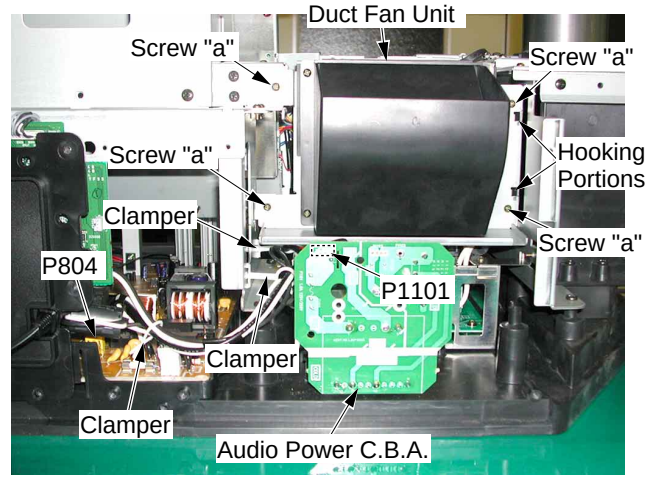
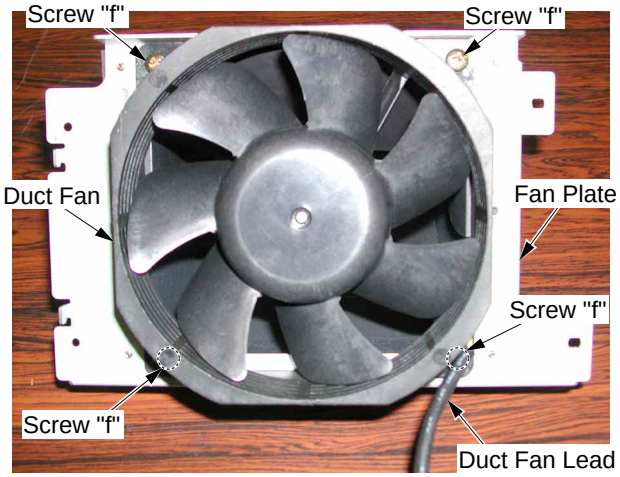


Fig. D3-3-1

<Removal of the Duct Fan from the Duct Fan Unit>
Remove the Duct Fan from the Duct Fan Unit by removing 4 Screws.



<Front View>

Fig. D3-3-2

Reassembly Notes for Duct Fan Lead:

- Install the Duct Fan into the Fan Plate so that the Duct Fan Lead is positioned as shown.
- The Duct Fan is an exhaust fan.

4. Remove the Audio Power C.B.A. by removing the 2 Screws and releasing the 2 Bosses and release it from the clamper.

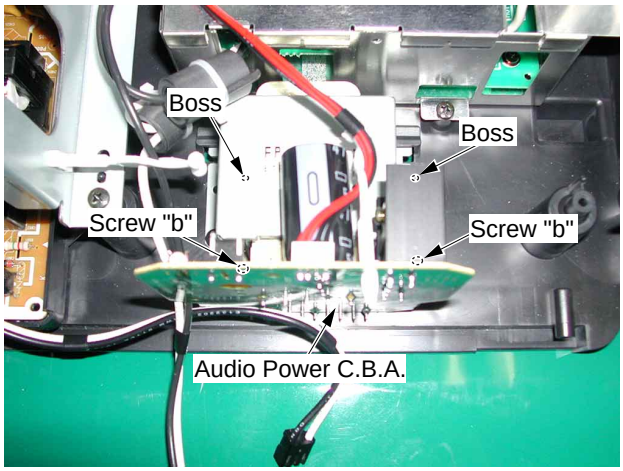


Fig. D3-4

5. 1) Disconnect the cable from the Lamp Socket by removing the 2 Screws.
   2) Remove the Temperature Fuse on the Lamp House by removing the 2 Screws. Disconnect Connector P1905 on the LCD Main C.B.A.
   3) Remove the Screw of the GND Plate and the GND Wire.
   4) Remove the GND Plate by removing the 2 Screws.
   5) Remove the Screw on the GND Wire.

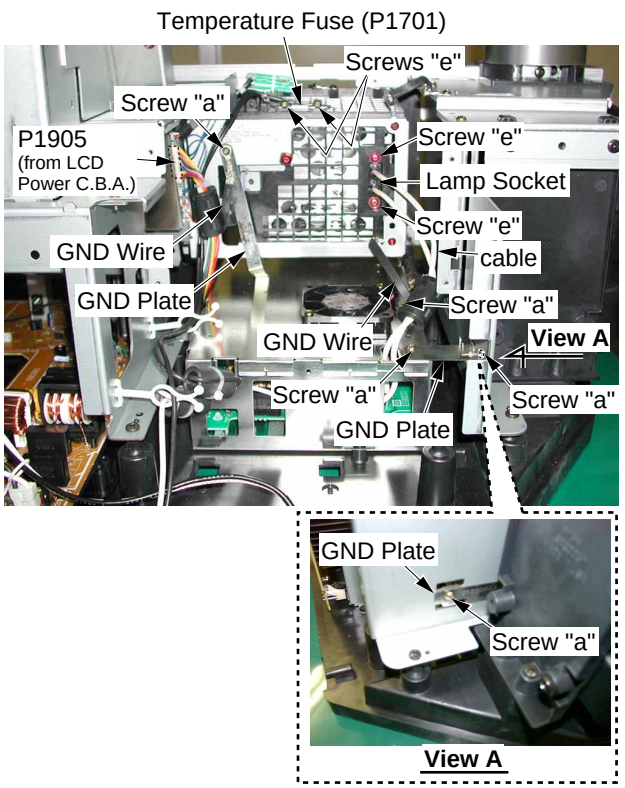
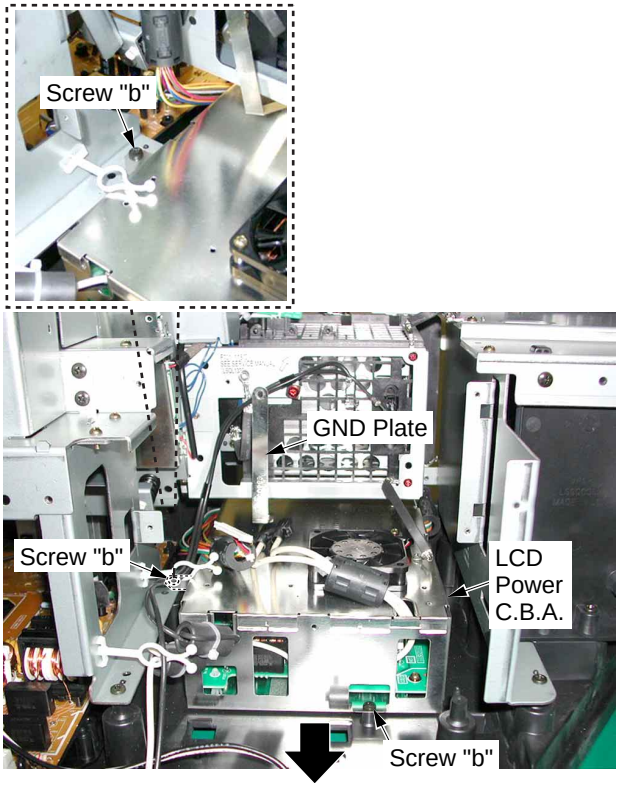
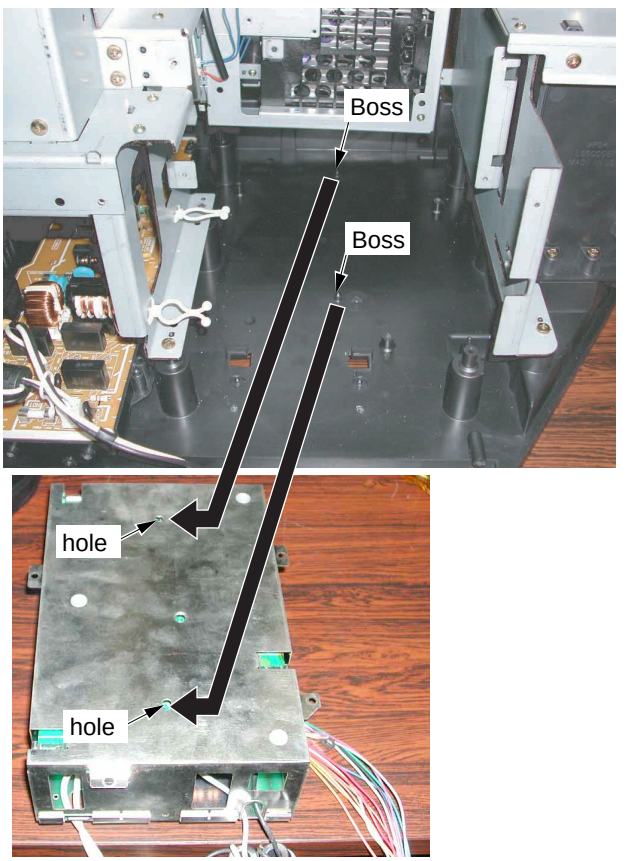


Fig. D3-5

6. 1) Remove the 2 Screws on the LCD Power C.B.A. Then, lift up and slide the LCD Power C.B.A. by releasing the 2 Bosses.
   2) Remove the GND Plate on the LCD Power C.B.A.



Lift up and slide



<Bottom View of LCD Power C.B.A.>

Fig. D3-6-1

Reassembly Notes for LCD Power C.B.A.:
Install the LCD Power C.B.A. so that the bosses are inserted into the holes on the bottom side of the LCD Power C.B.A.

Tips on installation of the LCD Power C.B.A.
Wind the Connector Lead around the LCD Power C.B.A. as shown. And then install it.

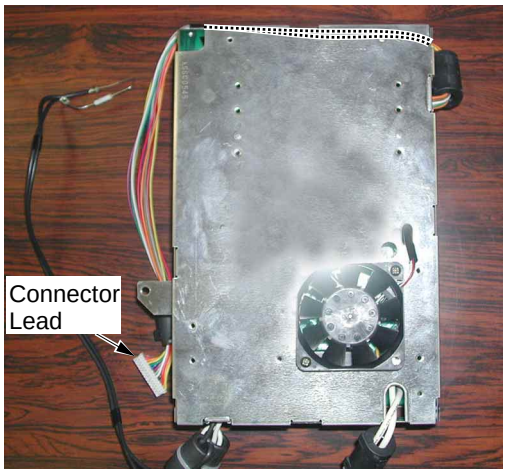


Fig. D3-6-2

<Removal of the Power Fan and the Temperature Fuse from the LCD Power C.B.A.>
Open the Top Shield Plate of the LCD Power C.B.A. by releasing the Tabs around the Top Shield Plate. Then, remove the Power Fan by removing the 2 Screws and disconnect Connector P1703 on the LCD Power C.B.A.

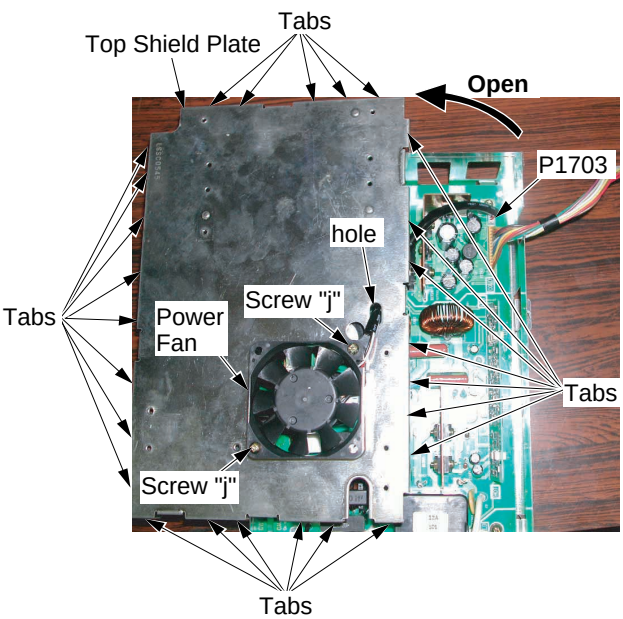


Fig. D3-7

Reassembly Notes for Power Fan:
Install the Power Fan so that the name plate (manufacture's name etc.) faces in (not visible from the outside) as shown.

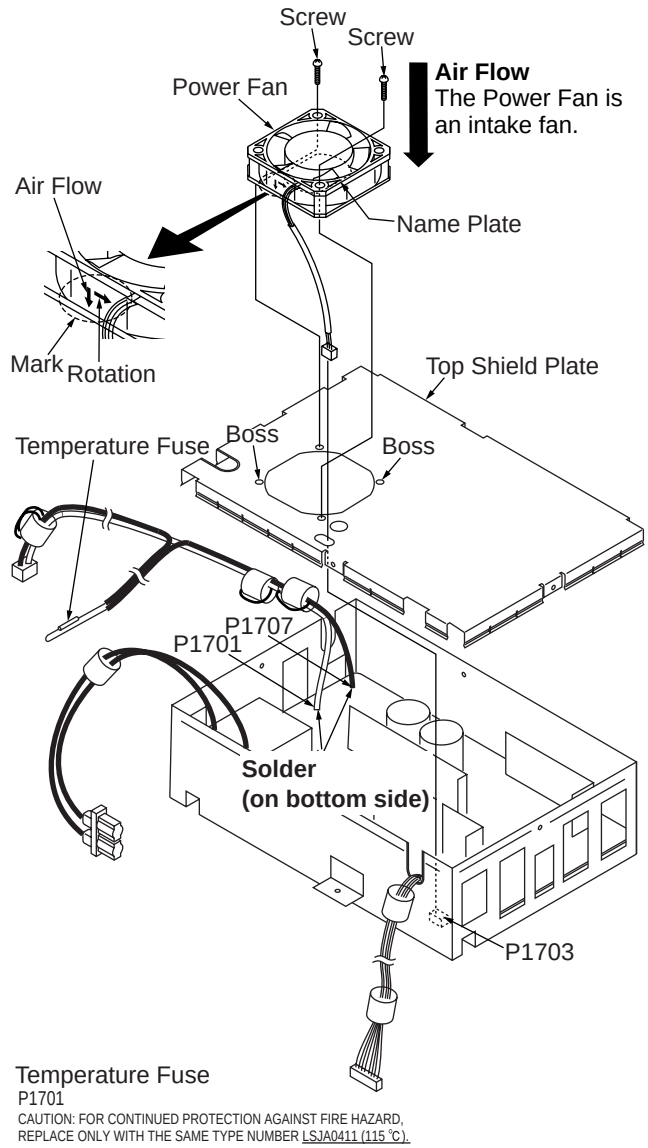
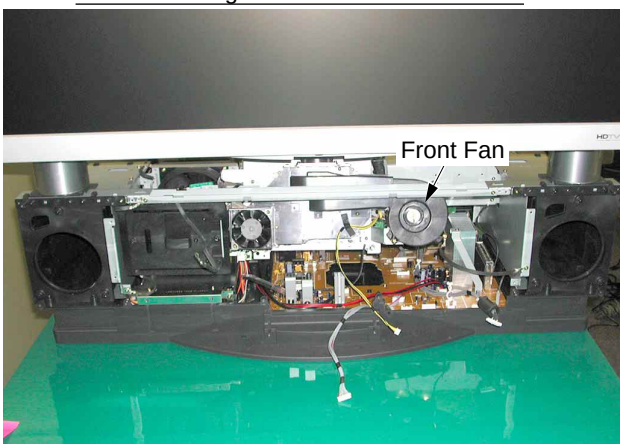


Fig. D3-8

REMOVAL OF THE FRONT FAN FROM THE UNIT

1. Remove the Rear Cover, the AV Front Door, the Front Cover L Unit, the Front Cover R Unit, the Center Panel Unit, the Lamp Cover and the Base Front Panel Unit. Refer to Steps 1~7 in “HOW TO REMOVE THE TV MAIN C.B.A. AND THE REAR JACK C.B.A.”

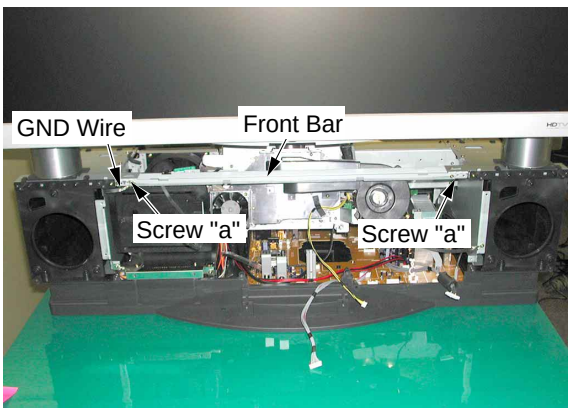
After removing the Base Front Panel Unit



<Front View>

Fig. D4-1-1

2. Remove the Front Bar by removing the 2 Screws.



<Front View>

Fig. D4-1-2

3. Remove the Front Fan by removing the 3 Screws and disconnecting Connector P1901 on the LCD Main C.B.A.

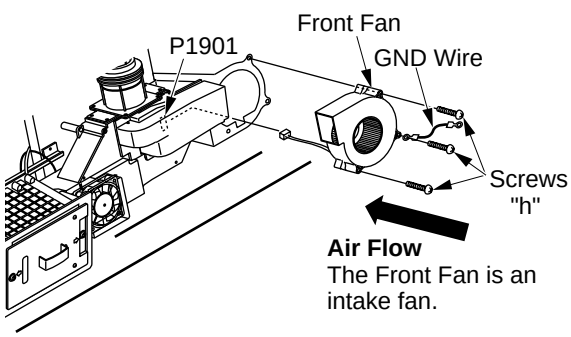
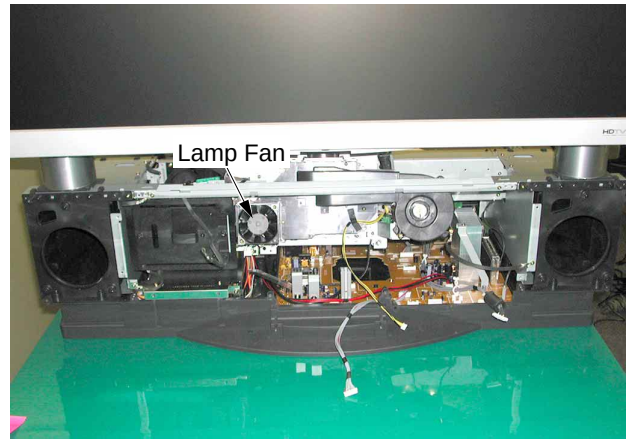


Fig. D4-1-3

REMOVAL OF THE LAMP FAN FROM THE UNIT

1. Remove the Rear Cover, the AV Front Door, the Front Cover L Unit, the Front Cover R Unit, the Center Panel Unit, the Lamp Cover and the Base Front Panel Unit. Refer to Steps 1~7 in “HOW TO REMOVE THE TV MAIN C.B.A. AND THE REAR JACK C.B.A.”

After removing the Base Front Panel Unit



<Front View>

Fig. D4-2-1

2. Remove the Lamp Fan and Shield by removing the 2 Screws and disconnecting Connector P1902 on the LCD Main C.B.A.

Note:
The Air Flow direction is practically the opposite of the arrow printed on the Lamp Fan. When installing the Lamp Fan, be sure to install as shown.

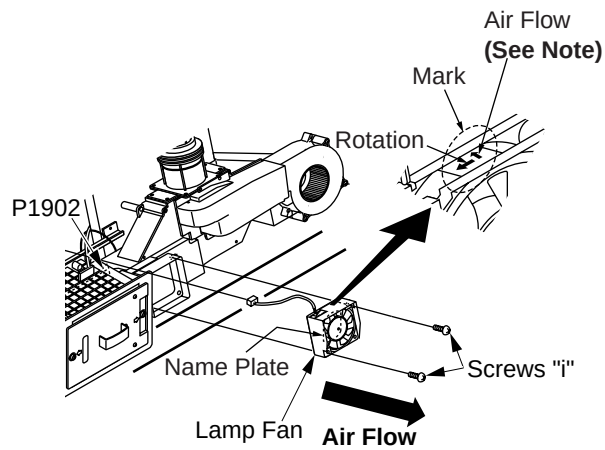
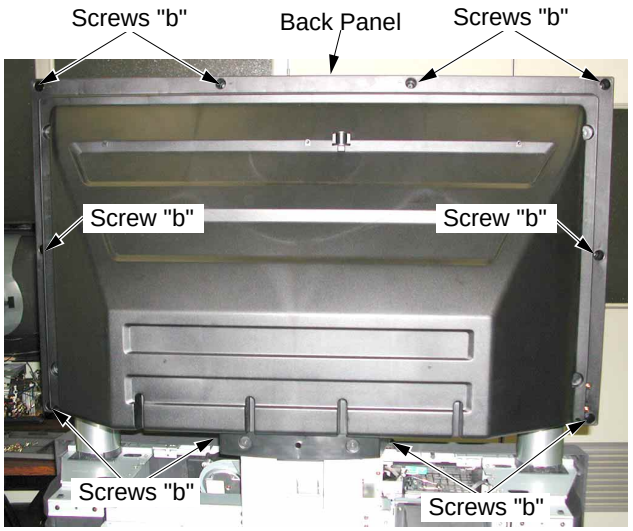


Fig. D4-2-2

Reassembly Notes for Lamp Fan:
Install the Lamp Fan so that the name plate (manufacture’s name etc.) faces in (not visible from the outside) as shown.

REMOVAL OF THE SCREEN UNIT, THE MIRROR AND THE BACK PANEL

1. Remove the Rear Cover, the AV Front Door, the Front Cover L Unit and the Front Cover R Unit. Refer to Steps 1~4 in “HOW TO REMOVE THE TV MAIN C.B.A. AND THE REAR JACK C.B.A.”
2. Remove the only 10 Screws of the Back Panel as shown. Then, remove the Screen Unit from the front side.
   Note:
   The Screen Unit is supplied as a unit only. The individual parts in Screen Unit are not supplied separately.



<Rear View>

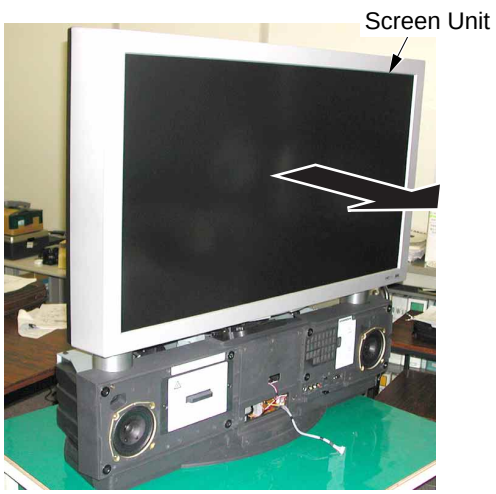
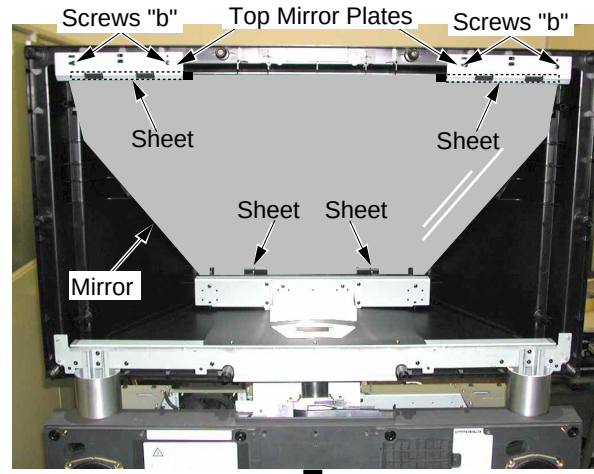
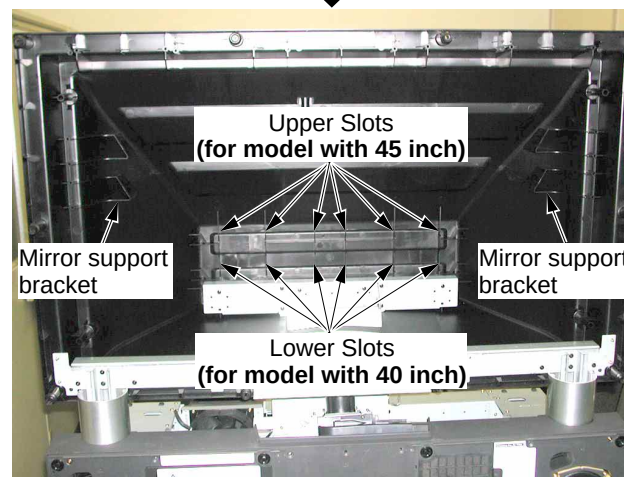


Fig. D5-1

3. 1) Remove the 2 Top Mirror Plates by removing the 4 Screws.
   2) Remove the Mirror from the top by releasing the slots carefully.
   Note:
   When removing, be careful that the Mirror does not fall down.





<Front View>

Fig. D5-2

Reassembly Notes for Mirror:
Install the Mirror as following procedures.

1) Peel the Protection Sheet approx. 20 mm (maximum 22 mm) from the top and bottom edges of the Mirror to place the Sheet. Then, place the 4 sheets on the top and bottom edges of the Mirror as shown.

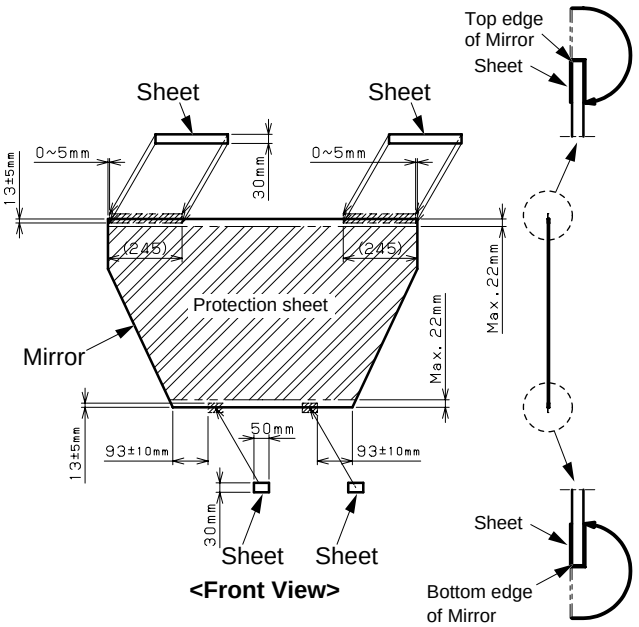


Fig. D5-3-1

2) When handling the Mirror, do not touch the Mirror surface. Be sure to hold the sheet portions of the Mirror.

3)

CAUTION:

Insert the Mirror from the top into the lower slots (For model with 40 inch Mirror) or into the upper slots (For model with 45 inch Mirror) of the Back Panel carefully avoiding the Mirror Support Brackets. Otherwise, the Mirror may crack.
Then, the Mirror is secured with the Mirror Support Brackets.

4) Install the 2 Top Mirror Plates on the Mirror and tighten the 4 Screws.
5) Peel the Protection Sheet from the Mirror.

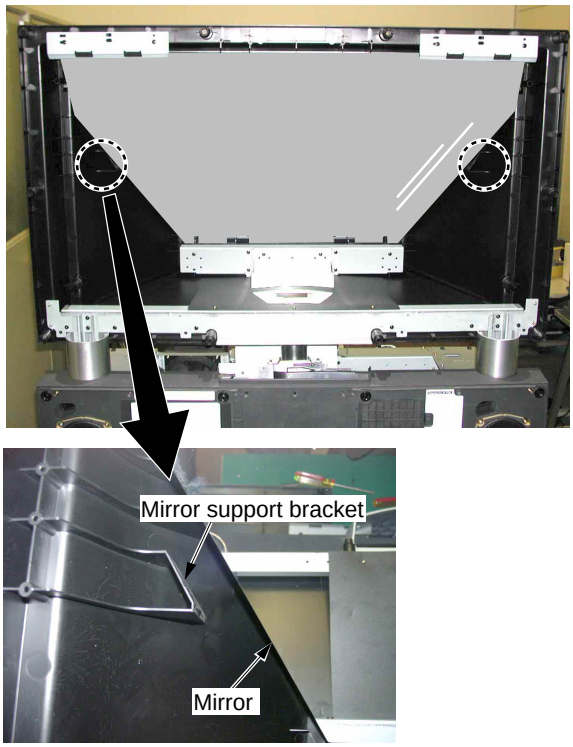


Fig. D5-3-2

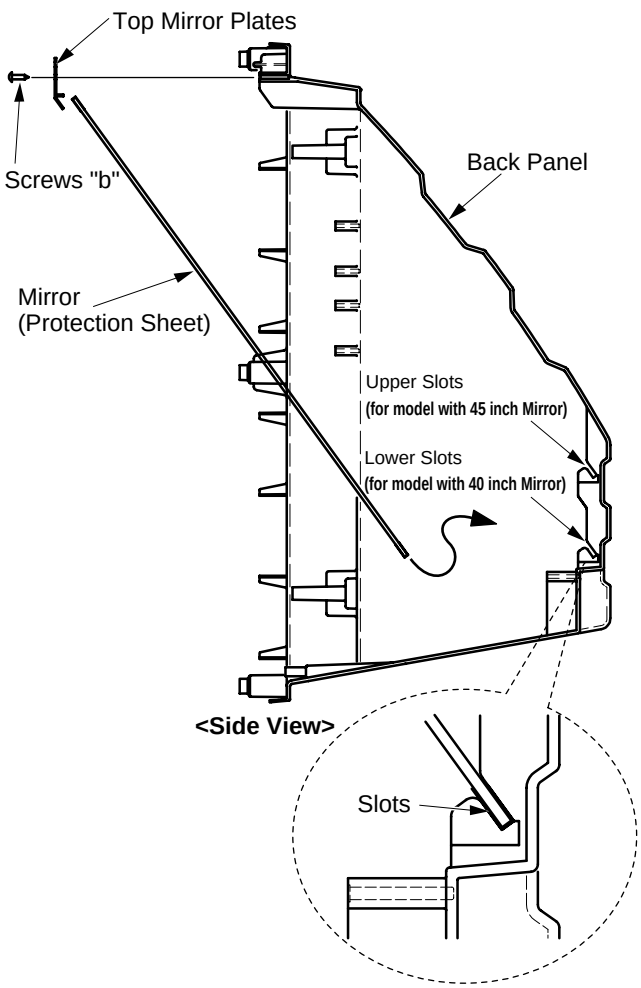
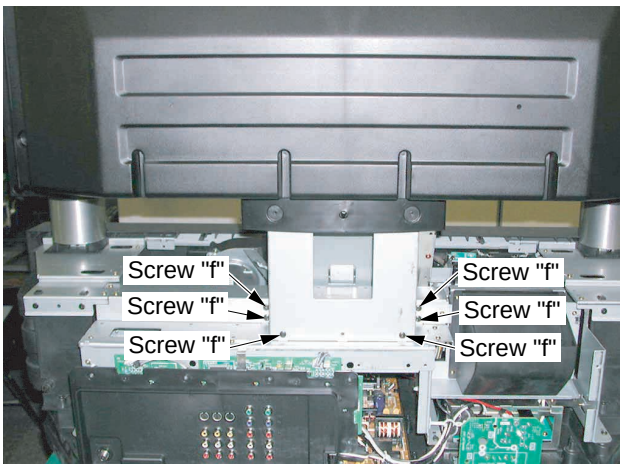
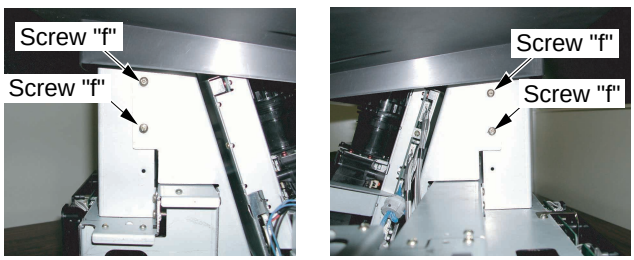


Fig. D5-4

4. 1) Remove the Light Prevention Sheet by removing the 3 Screws.
   2) Remove the Back Panel by removing the 18 Screws. Then, lift up the Back Panel.

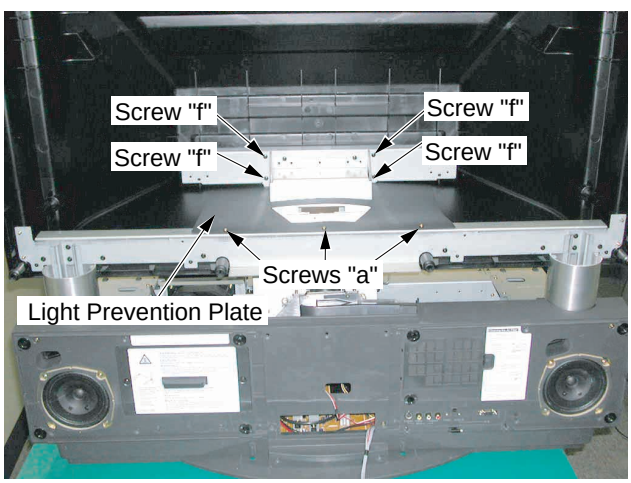


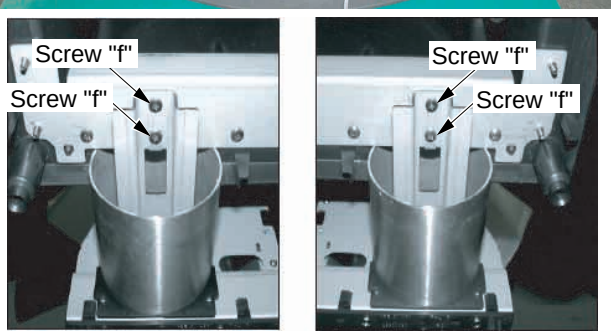
<Rear View>



<Side View>

Fig. D5-5



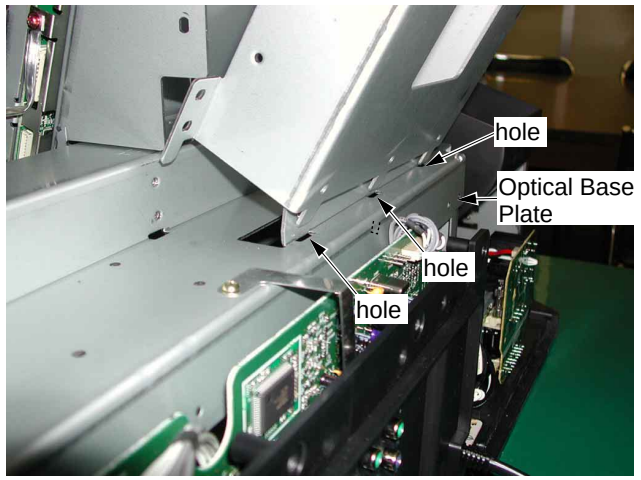


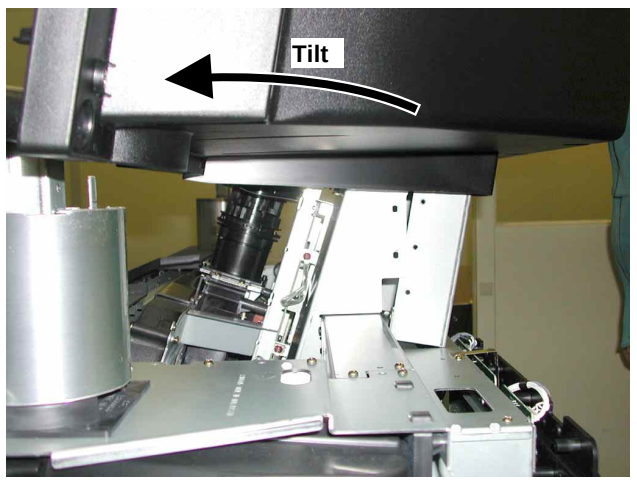
<Front View>

Fig. D5-6

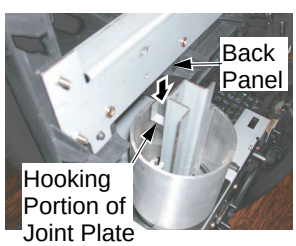
Reassembly Notes for Back Panel:

1) Insert the Back Panel to the holes of the Optical Base Plate.
2) Tilt the Back Panel as indicated by the arrow and set the Back Panel Unit into the Hooking Portions of the Joint Plates as shown.

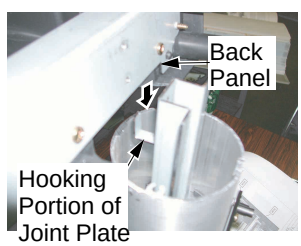




<Side View>



<Front View> (left)



<Front View> (right)

Fig. D5-7

REMOVAL OF THE FRONT JACK C.B.A., THE RGB JACK C.B.A., THE FRONT THERMISTOR C.B.A., THE LAMP COVER SWITCH C.B.A. AND THE SPEAKER

1. Disconnect Connector P2921 on the Lamp Cover Switch C.B.A. Remove the Lamp Cover Switch C.B.A. by removing the Screws.
2. Remove the Front Jack GND Plate B by removing the 3 Screws.
3. Remove the RGB Jack C.B.A. by removing the 2 Screws.
4. Remove the Front Jack C.B.A. and the Front Jack GWD Plate by removing the 3 Screws.
5. Peel the Joint Filter back slightly and remove the Front Thermistor C.B.A. by removing the Screws.

   Reassembly Notes for Front Thermistor C.B.A.:

   1) When installing the Front Thermistor C.B.A., set the Thermistor leads into the groove on the Base Front Panel Unit so that the thermistor is in the correct position as shown. Then, restick the Joint Filter securely.

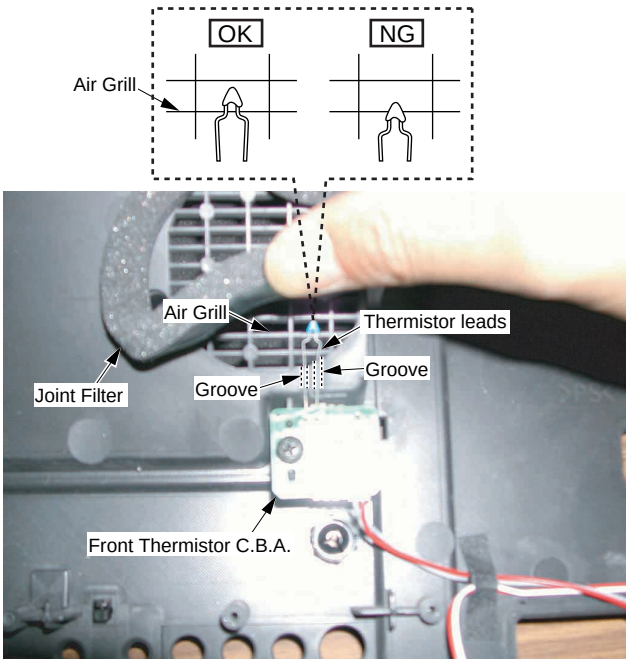


Fig. D6-1

6. Remove the Speaker -L and -R by removing the 8 Screws.

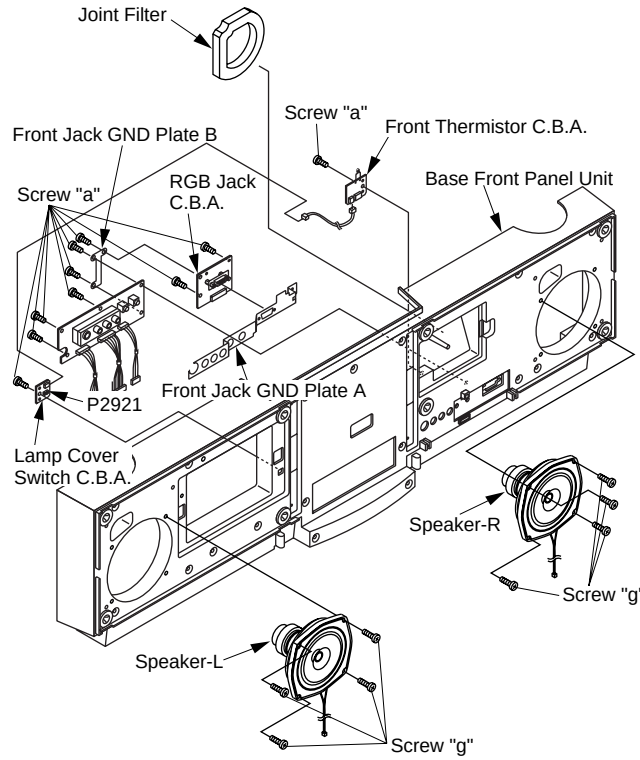
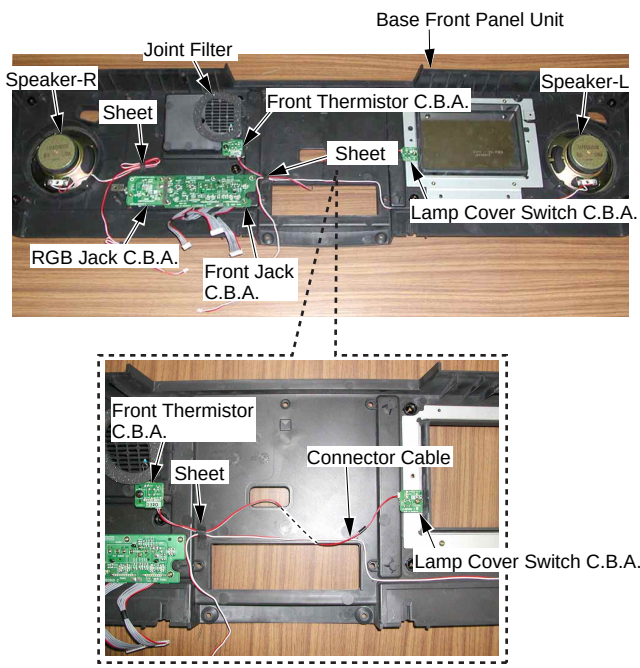


Fig. D6-2

Reassembly Notes for Speaker Leads:

1) Install the Speaker -L and -R which must be lined as shown. After installing the Speaker -L and -R, fasten the Speaker leads and place the sheets as shown.



Wiring of Connector Cable

Fig. D6-3

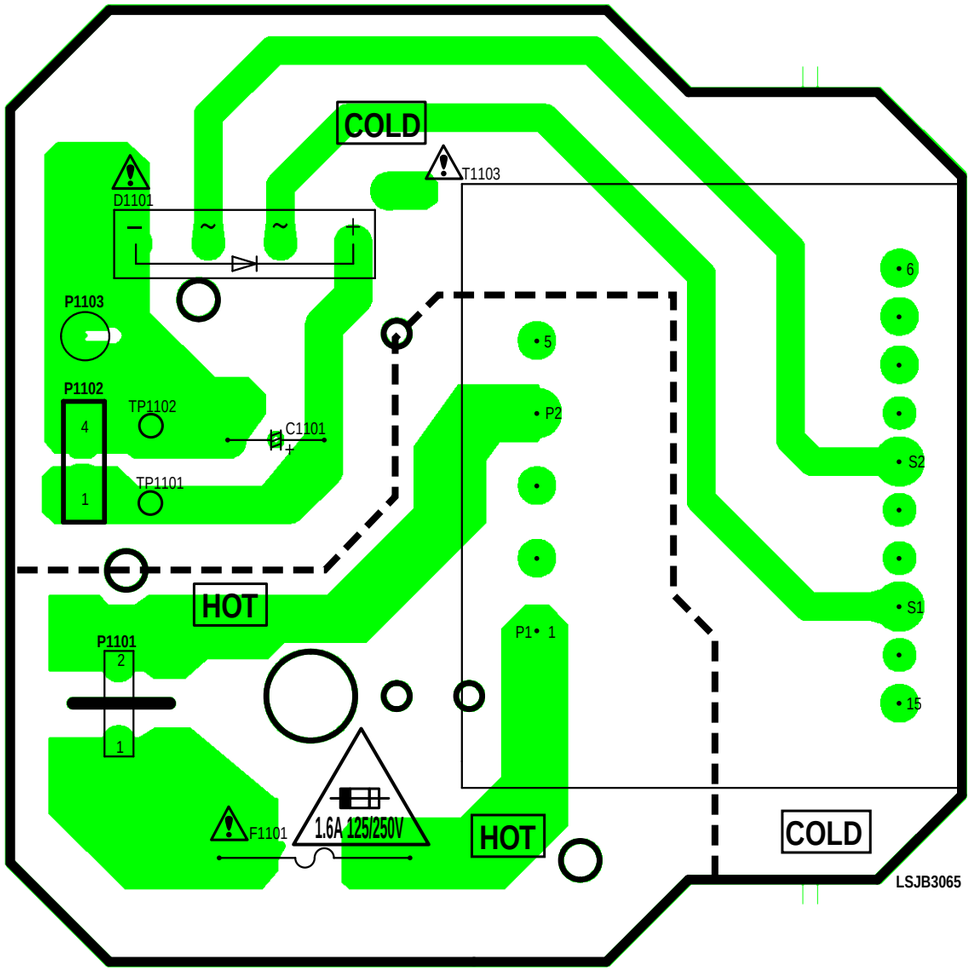
AUDIO POWER C.B.A. LSEP3065A

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST FOR PROPER PARTS CONTENT.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE 1.6A 125/250V FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES
D' INCENDIE N' UTILISERQUE DES FUSIBLE DE MÉME
TYPE 1.6A 125/250V

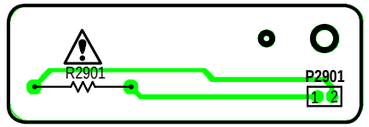
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.



HOT CIRCUIT. BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.

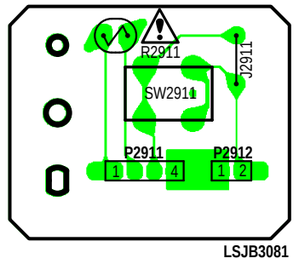
LAMP THERMISTOR C.B.A. LSEP3080A1

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST FOR PROPER PARTS CONTENT.



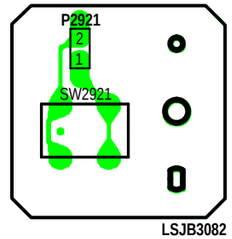
FRONT THERMISTOR C.B.A. LSEP3081A

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST FOR PROPER PARTS CONTENT.



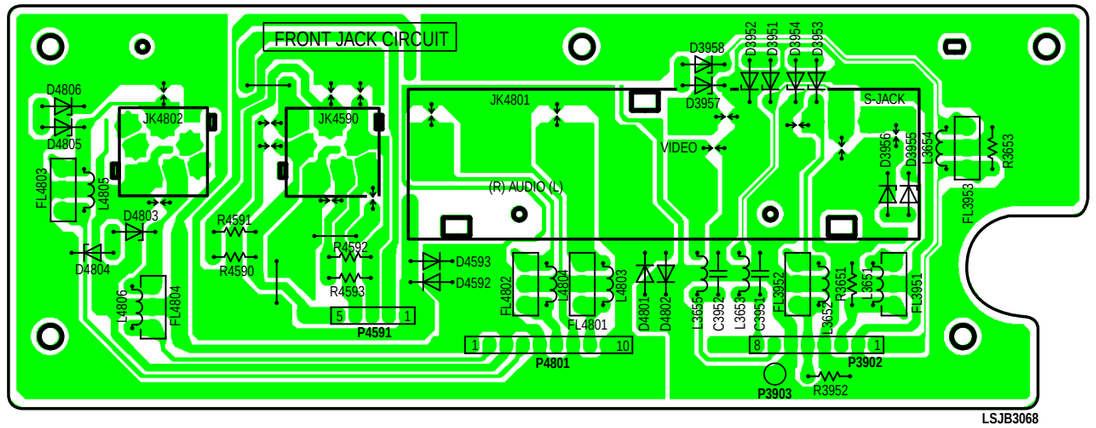
LAMP COVER SWITCH C.B.A. LSEP3082A

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST FOR PROPER PARTS CONTENT.



FRONT JACK C.B.A. LSEP3068A

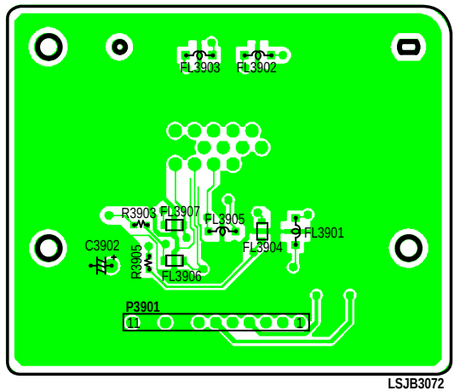
NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST FOR PROPER PARTS CONTENT.



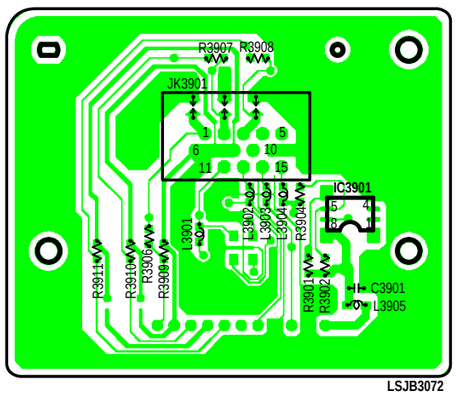
RGB JACK C.B.A. LSEP3072A

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST FOR PROPER PARTS CONTENT.

(COMPONENT SIDE)



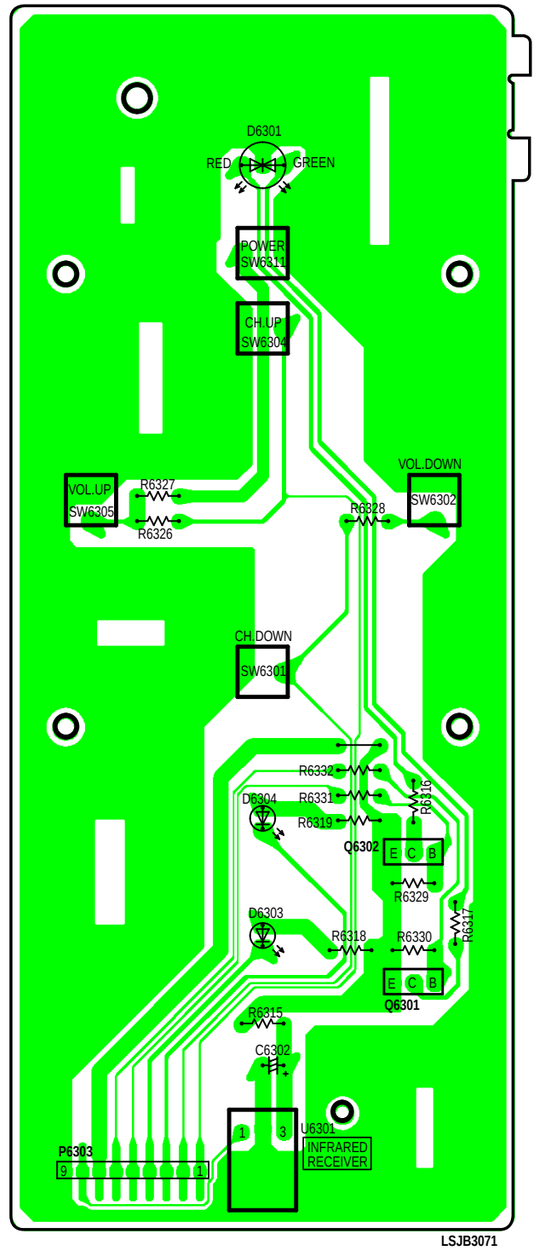
(FOIL SIDE)



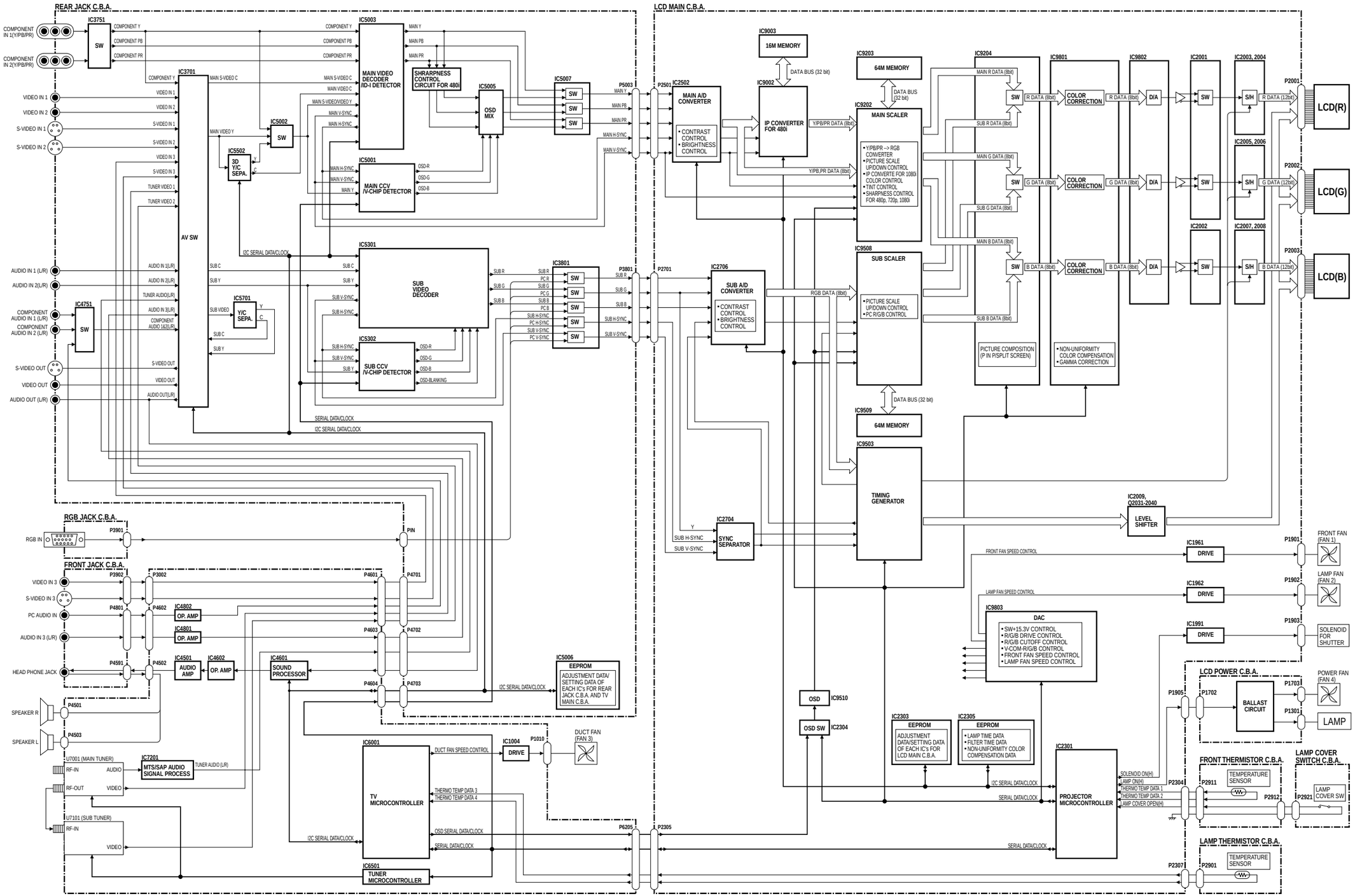
OPERATION C.B.A. LSEP3071A

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST FOR PROPER PARTS CONTENT.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

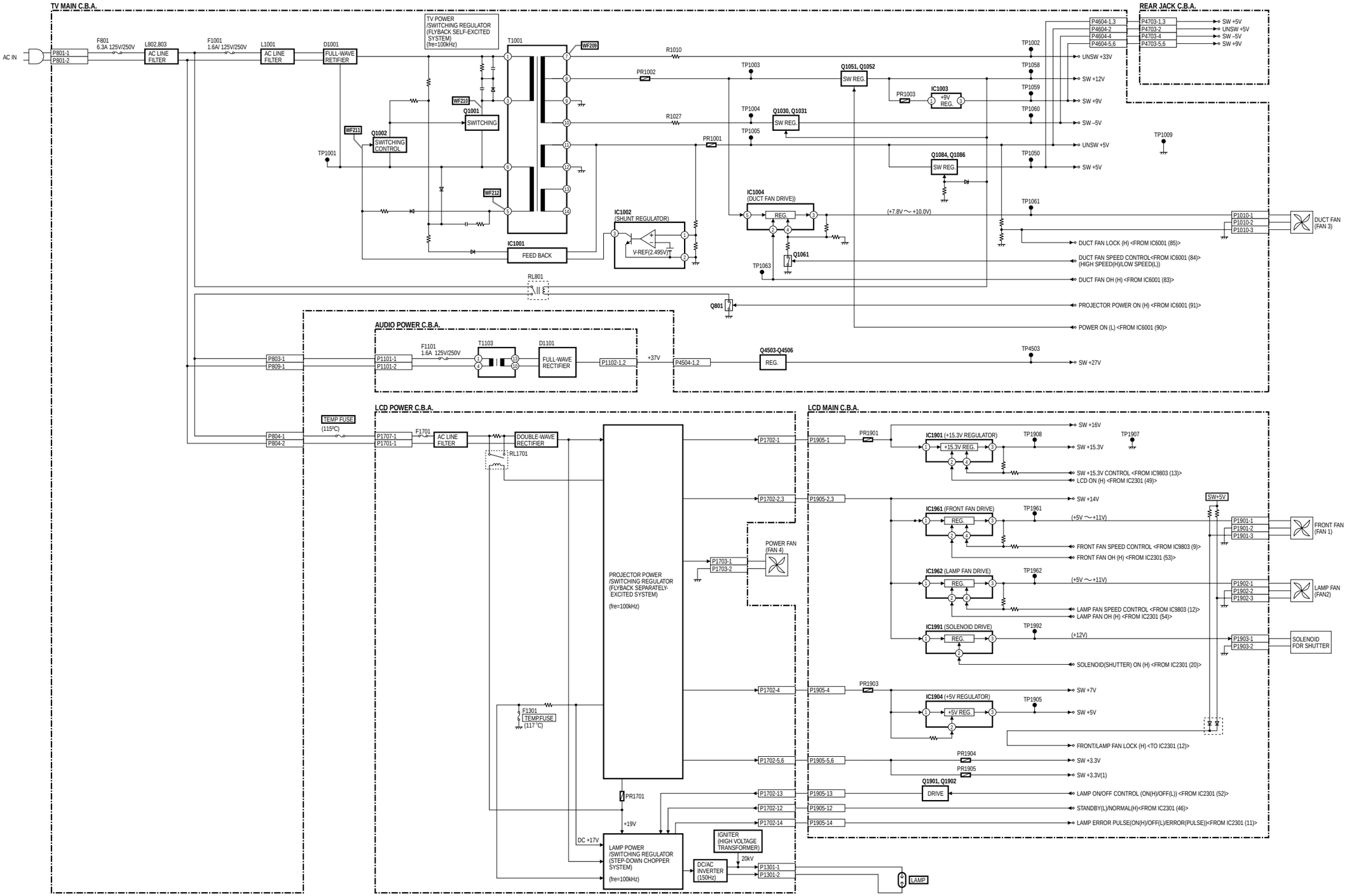


OVERALL BLOCK DIAGRAM

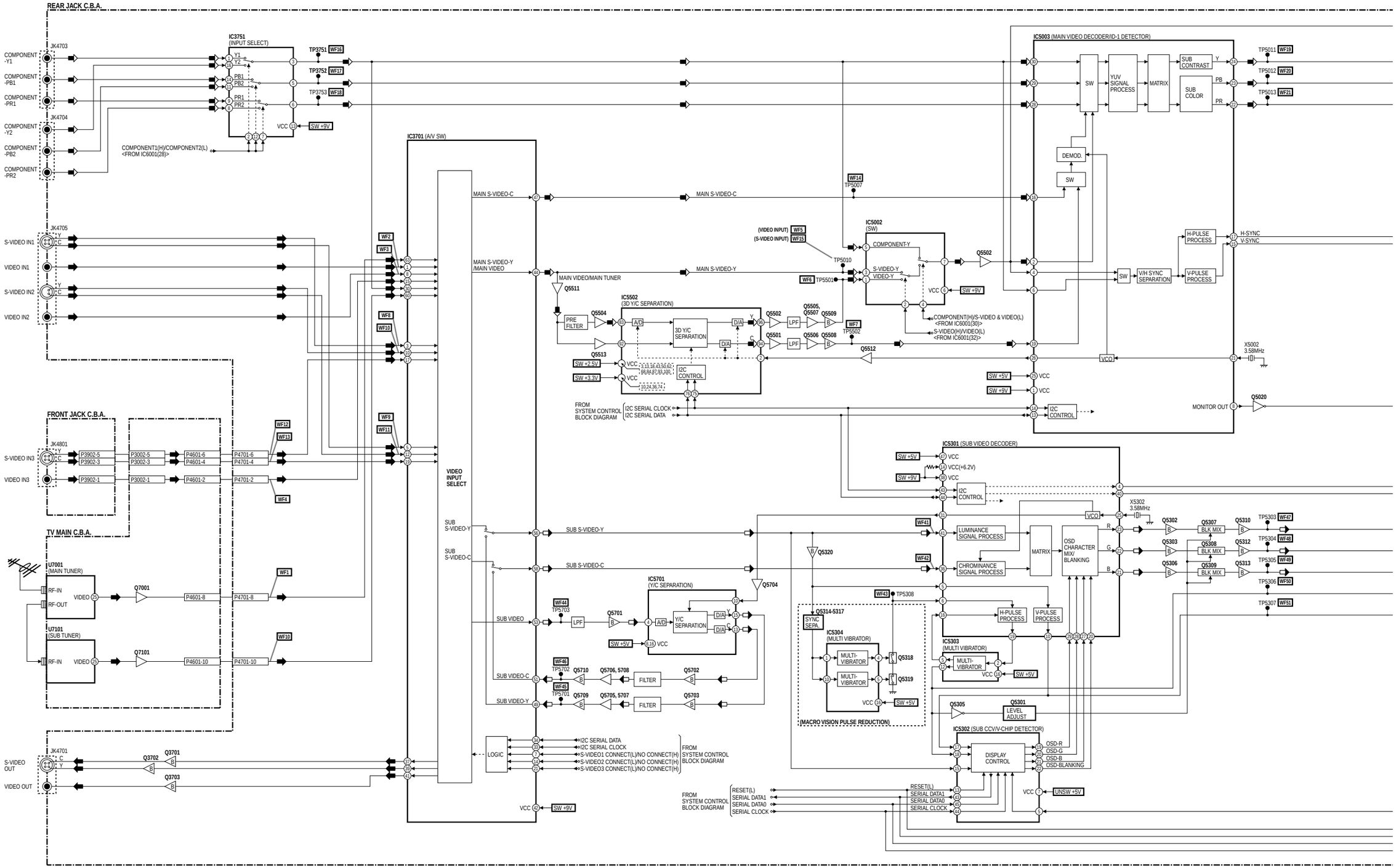


OVERALL BLOCK DIAGRAM
PT-40LC12/PT-45LC12

POWER SUPPLY BLOCK DIAGRAM

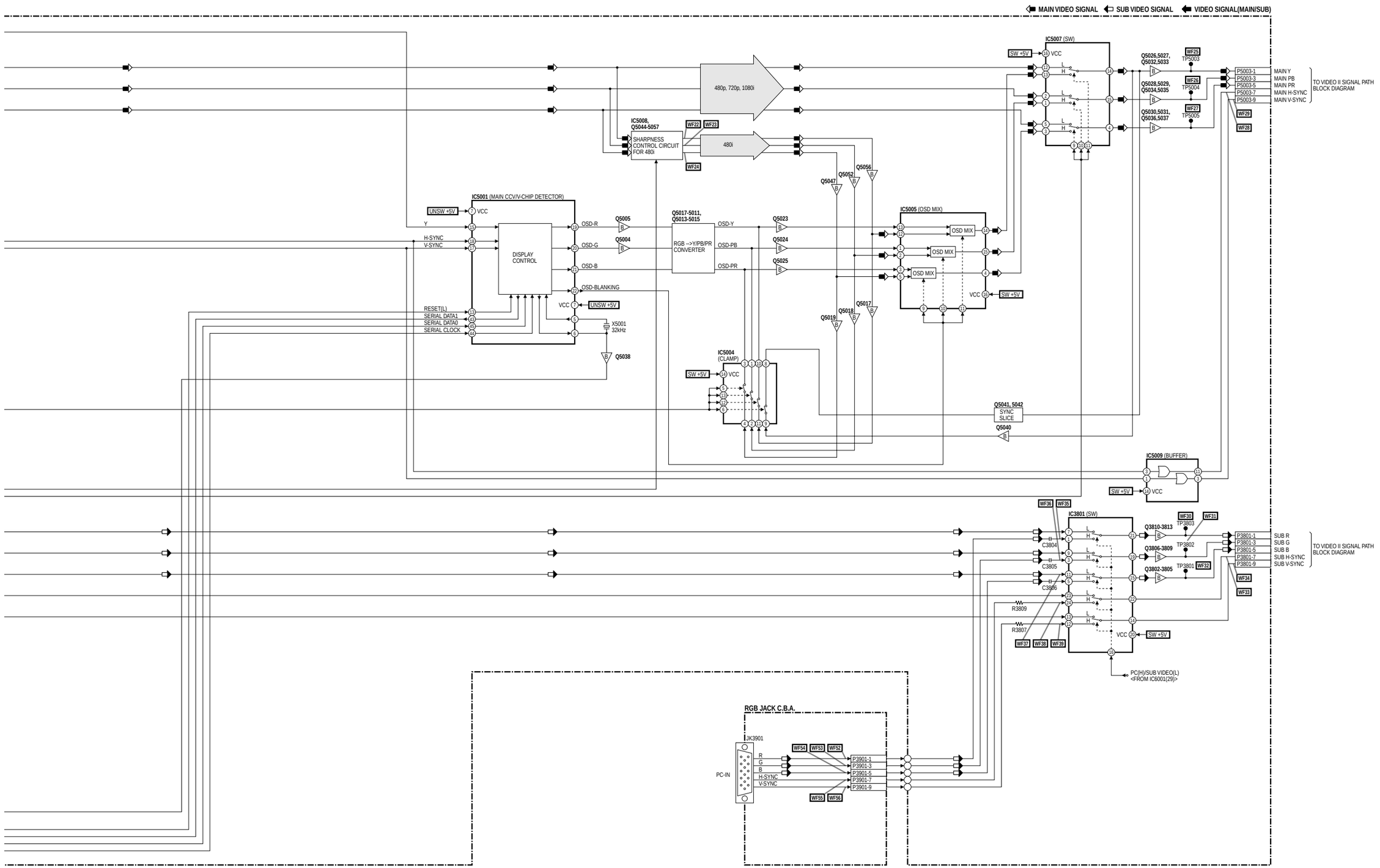


VIDEO SIGNAL PATH I BLOCK DIAGRAM (1/2)



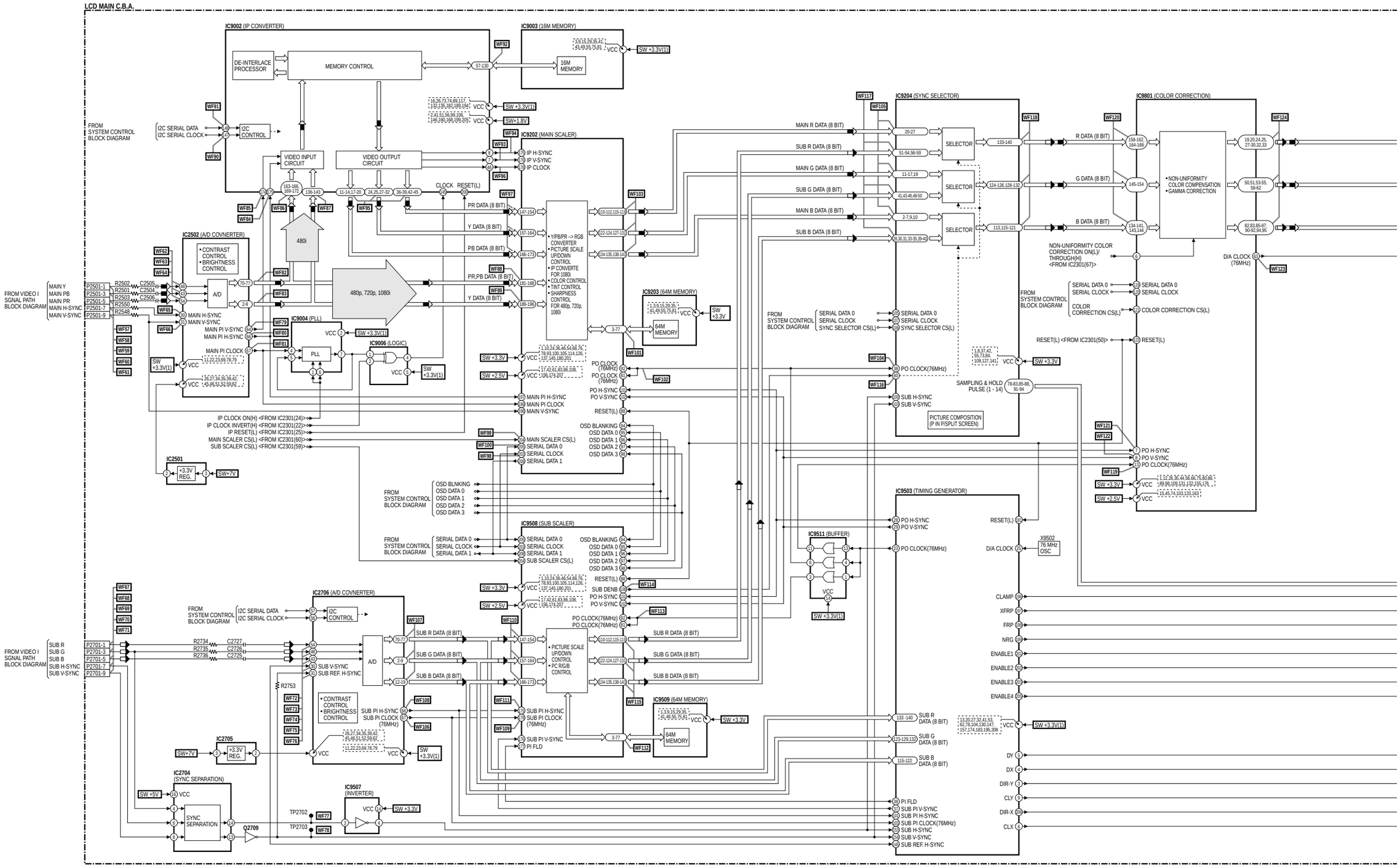
VIDEO SIGNAL PATH I BLOCK DIAGRAM
PT-40LC12/PT-45LC12

VIDEO SIGNAL PATH I BLOCK DIAGRAM (2/2)



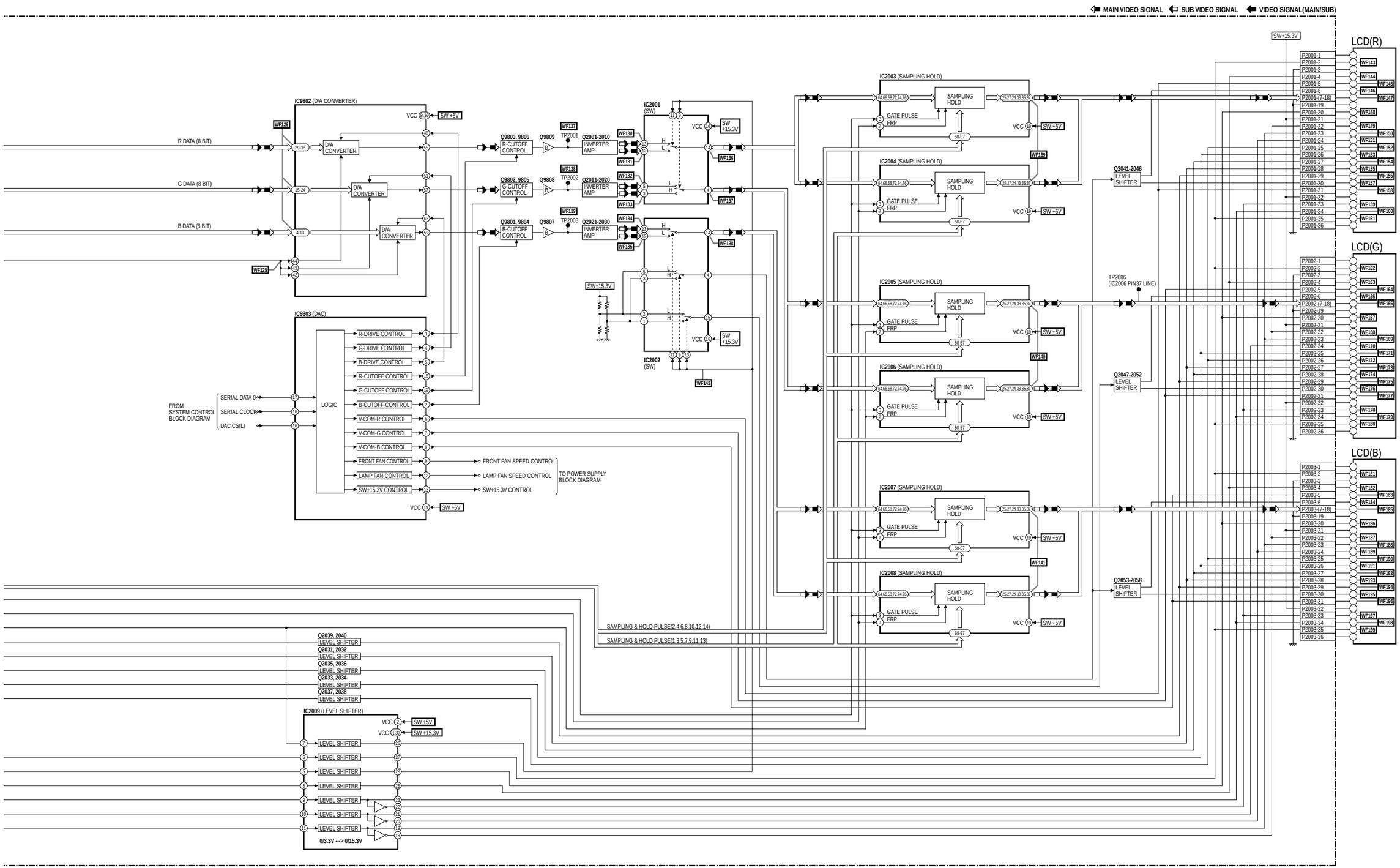
VIDEO SIGNAL PATH I BLOCK DIAGRAM
PT-40LC12/PT-45LC12

VIDEO SIGNAL PATH II BLOCK DIAGRAM (1/2)



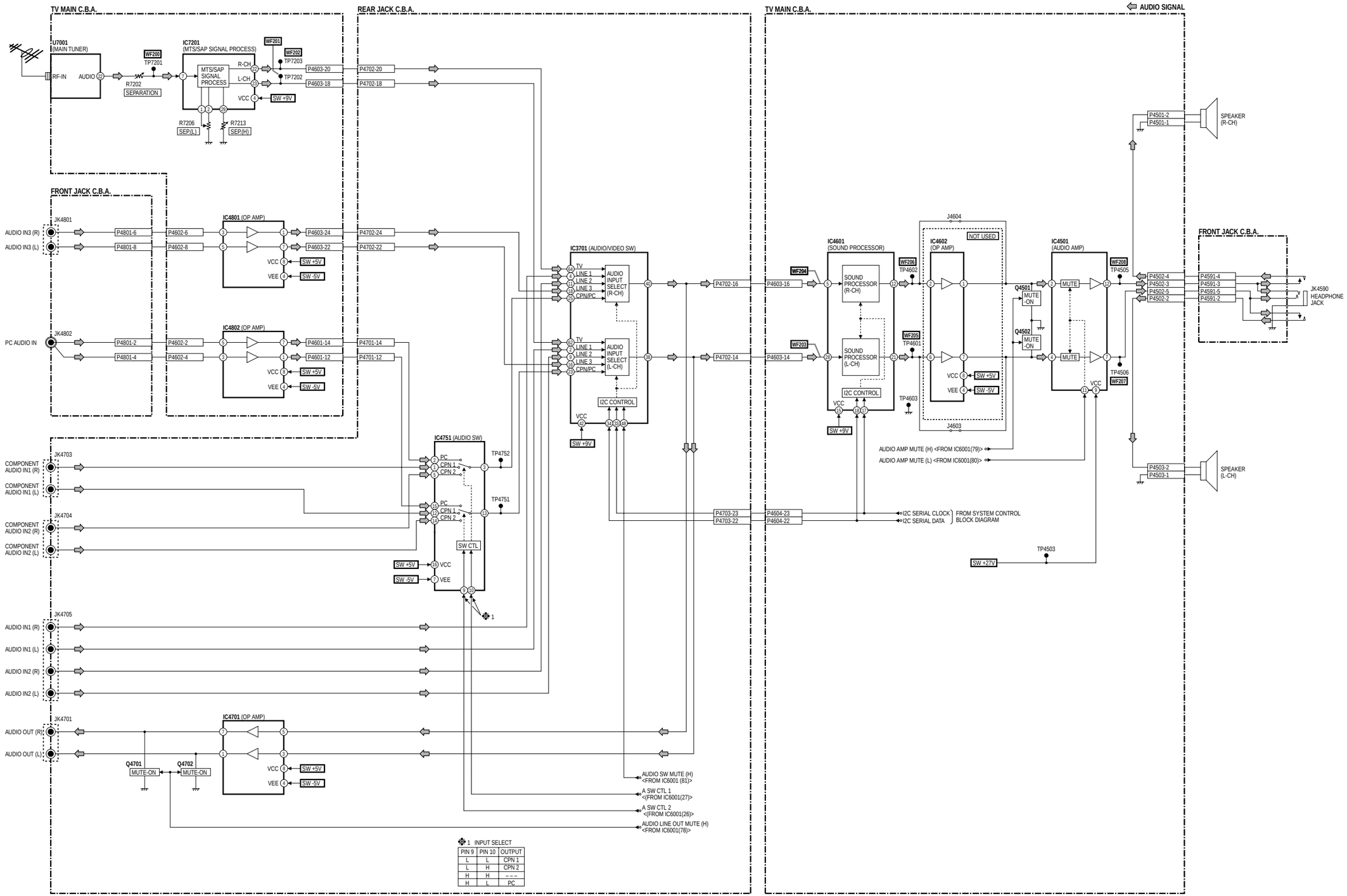
VIDEO SIGNAL PATH II BLOCK DIAGRAM
PT-40LC12/PT-45LC12

VIDEO SIGNAL PATH II BLOCK DIAGRAM (2/2)



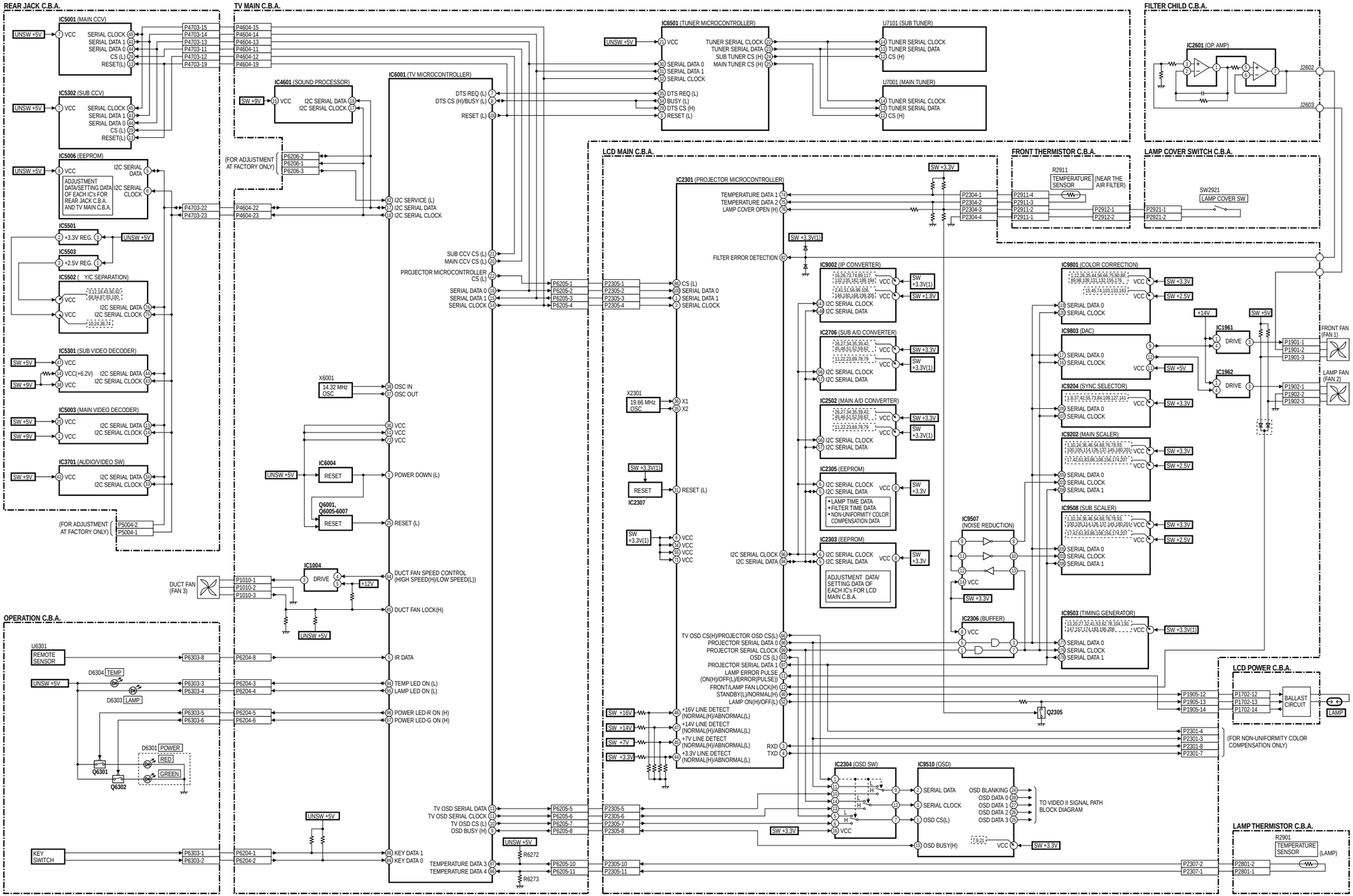
VIDEO SIGNAL PATH II BLOCK DIAGRAM
PT-40LC12/PT-45LC12

AUDIO SIGNAL PATH BLOCK DIAGRAM



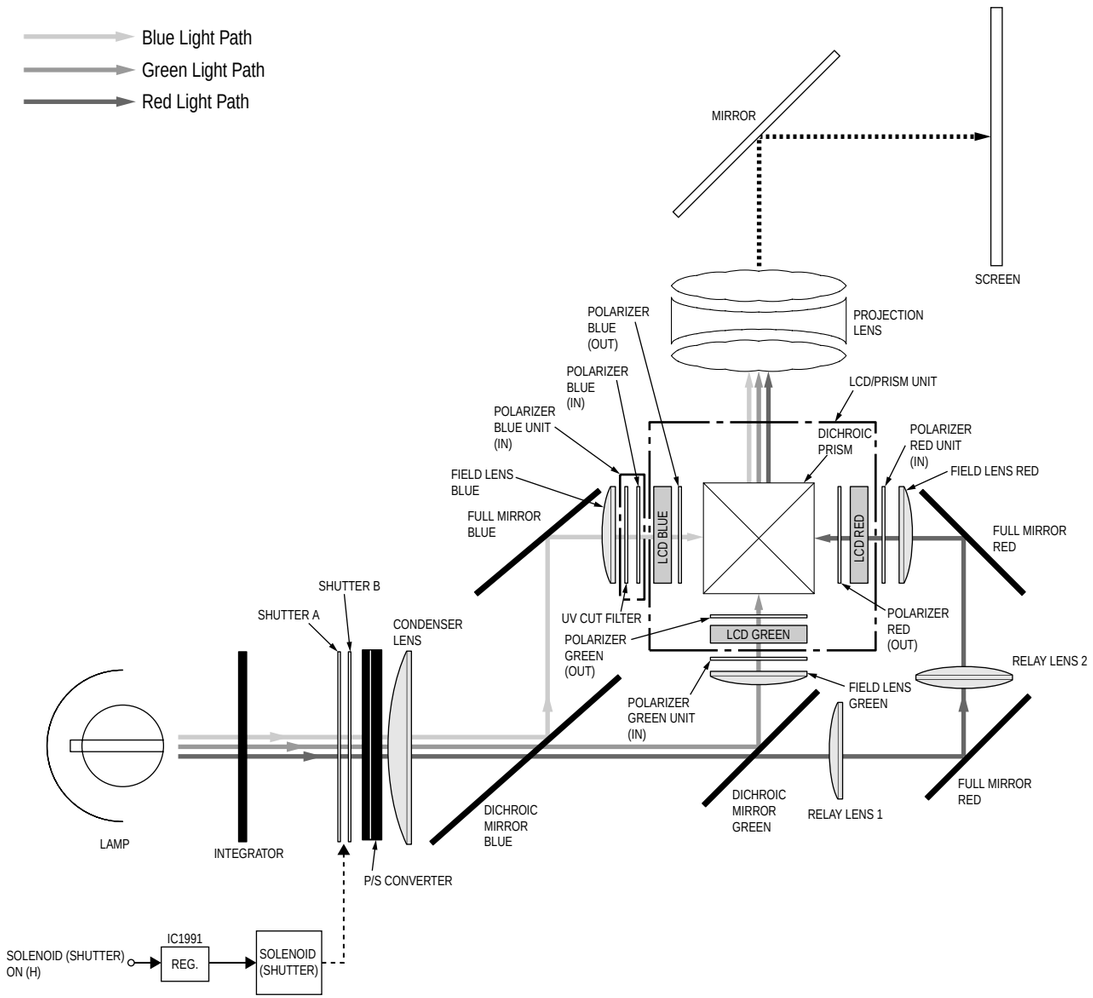
AUDIO SIGNAL PATH BLOCK DIAGRAM
PT-40LC12/PT-45LC12

SYSTEM CONTROL BLOCK DIAGRAM



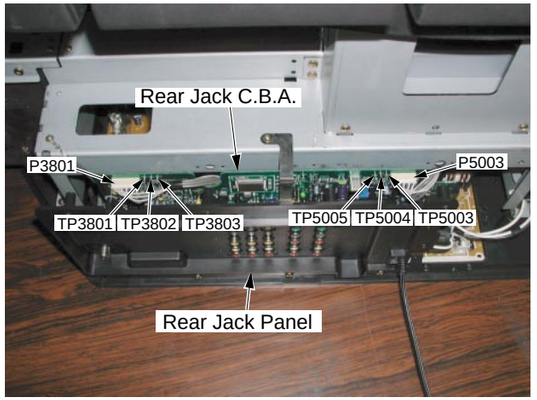
SYSTEM CONTROL BLOCK DIAGRAM
PT-40LC12/PT-45LC12

OPTICAL BLOCK DIAGRAM

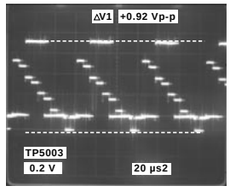
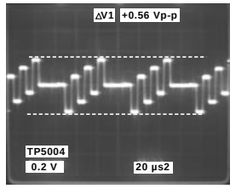
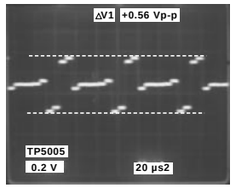
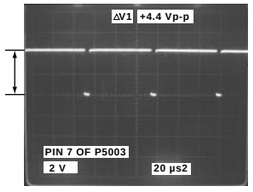
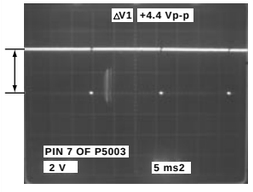


WAVEFORMS

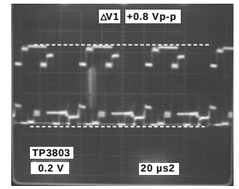
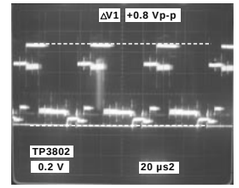
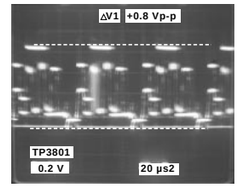
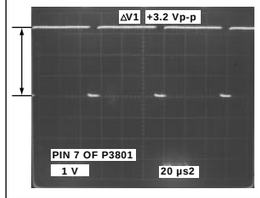
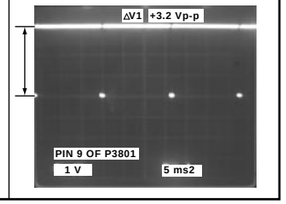
Location of Connectors and TP's on REAR JACK C.B.A.



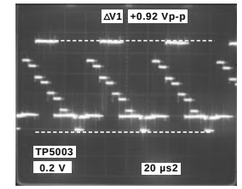
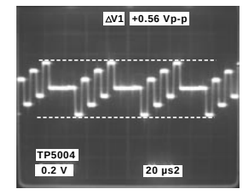
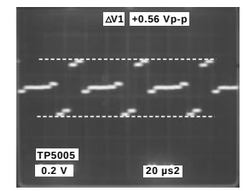
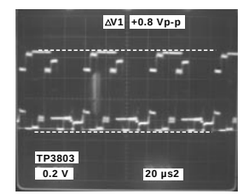
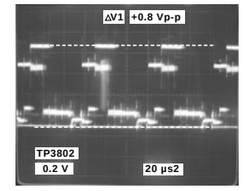
Waveforms of Connector P5003 on REAR JACK C.B.A.

Pin No.	Signal Name	Waveforms
1	MAIN Y	
2	GND	
3	MAIN PB	
4	GND	
5	MAIN PR	
6	GND	
7	MAIN H-SYNC	
8	GND	
9	MAIN V-SYNC	

Waveforms of Connector P3801 on REAR JACK C.B.A.

Pin No.	Signal Name	Waveforms
1	SUB R	
2	GND	
3	SUB G	
4	GND	
5	SUB B	
6	GND	
7	SUB H-SYNC	
8	GND	
9	SUB V-SYNC	

Waveforms of TP's on REAR JACK C.B.A.

TP No.	Signal Name	Waveforms
TP5003	MAIN Y	
TP5004	MAIN PB	
TP5005	MAIN PR	
TP3803	SUB R	
TP3802	SUB G	
TP3801	SUB B